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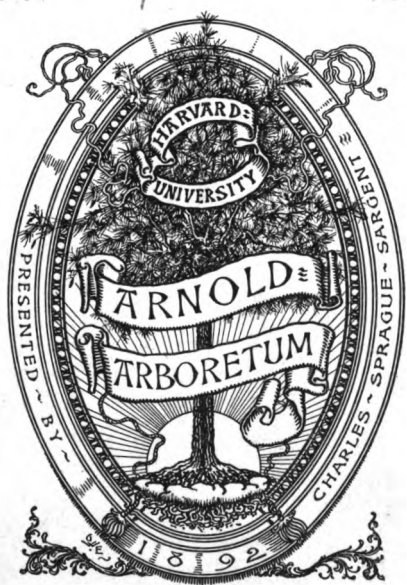
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PLANTS
OF THE
BERMUDAS,
OR SOMERS' ISLANDS.

BY
OSWALD A. READE,
Pharmaceutical Chemist, London.

“ Into high calms of the sunny air
The Aloe climbs with her golden flower,
While sentinel Yucca and Prickly-pear
With lance and with bayonet guard her bower,
And the Life-leaf creeps by its fibred edge,
To hang out gay bells from the jutting ledge.”

—*Harper's Magazine, November, 1878.*

BERMUDA:
PRINTED AT THE “ROYAL GAZETTE” OFFICE, HAMILTON.
1885.





EASTER LILY.

Bermudian Variety of *Lilium Longiflorum*.

This plate represents a monstrous growth of the above variety which was raised by Mr. Harley Trott, Pembroke; it produced one hundred and forty-five flowers on one stem, and was exhibited at 62 St. Nicholas Hotel, New York, in May, 1883.

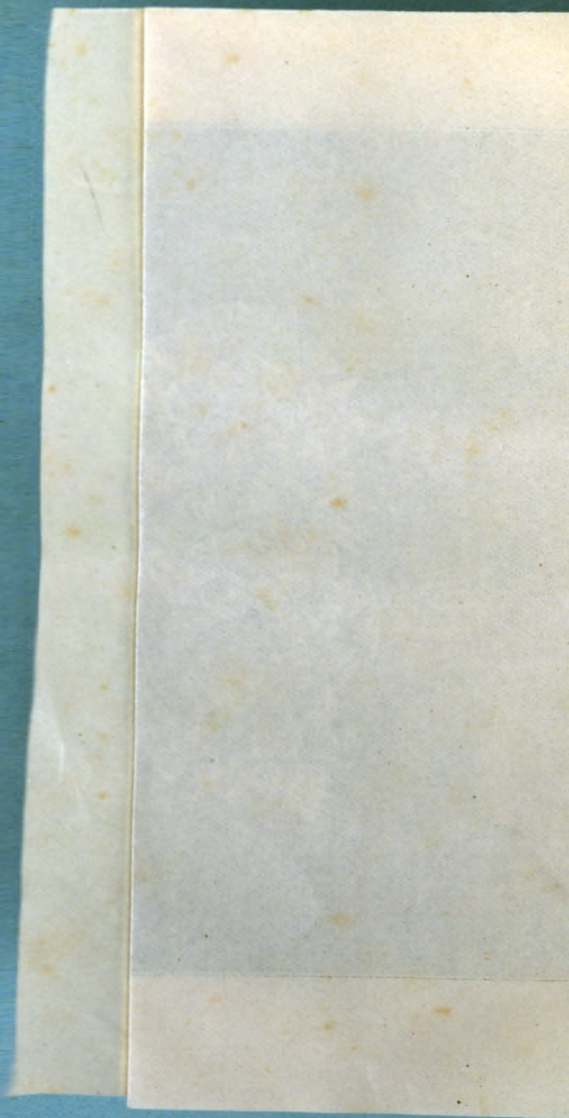
[See page 83.]

1883.

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P R E F A C E.

N the following pages I have endeavoured to give a short account of the various plants growing in these Islands, with such remarks as appear to me likely to be useful or interesting. The descriptions have been made as simple as possible, and with the assistance of the artificial key, no person of average ability should have any difficulty in making out the name of any plant he may collect, while the Natural System of Classification which has been followed in the book will give him an idea of its affinities, properties, etc.

More important cultivated plants which have been introduced are referred to under their respective orders, and a list of those of less importance will be found at the end of the book.

Some few technical terms have, of necessity, been used, but an explanation of these will be found in the Glossary.

As an apology for introducing this work, I may state that, hitherto, the only attempt in this direction has been an alphabetical catalogue of plants compiled by Dr. Hinson from a list left in the Public Library by Governor Lefroy. To this Catalogue I have now added about one hundred and fifty species of indigenous and naturalized plants—a large number considering the small area (twenty square miles) of our Islands.



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PLANTS OF BERMUDA.

CLASS I.—DICOTYLEDONS.

Stem when perennial, with one or more concentric layers of wood and a separable bark. Veins of leaves netted. Divisions of calyx and corolla usually four or five or some multiple of that number. Embryo with two seed leaves.

DIVISION I.—POLYPETALÆ.

Flowers usually with calyx and corolla, the divisions of the latter (petals) being distinct from each other.

SUB-DIVISION I.—THALAMIPLORÆ.

Ovary superior, the petals and stamens being inserted under the ovary and free from the calyx.

NATURAL ORDER I.—RANUNCULACÆ.

(Characters given under Natural Orders refer principally to Bermudian species.)

Herbs or shrubs with radical or alternate leaves (opposite in Clematis) sheathing without stipules. Sepals five or more. Petals five or more (deformed in Delphinium). Stamens many. Carpels many, free, one-celled.

GENUS I.—RANUNCULUS (Buttercups).

Annual or perennial herbs with divided leaves. Petals five, with a small gland at the base. Fruit a head of compressed seed-like grains (achenes).

1. *Ranunculus parviflorus*. An annual. Stem slender, decumbent, hairy. Lower leaves roundish, three to five lobed, lobes toothed; upper leaves cut into narrower entire lobes. Flowers one-sixth to one-third inch in diameter. Sepals five, subsequently reflexed, deciduous. Petals five, small, oblong; achenes small, with a hooked beak. Distribution, Europe, Jamaica, and Southern United States.

A common weed, waysides and cultivated grounds; flowers February to April; yellow.

2. *R. muricatus*. An annual. Stem erect, smooth; lower leaves stalked round, three lobed, coarsely toothed; upper three cleft wedge-shaped at the base. Flowers one-third to two-third inch in diameter. Sepals five, subsequently reflexed, deciduous; petals five, longer than sepals, with an emarginate gland; achenes large,

with a stout hooked beak and numerous spines. Distribution, Southern Europe, and Virginia, U.S., southward. Common in moist places. Flowers February to April; yellow.

3. *R. repens*. Perennial. Stem decumbent, with long runners. Leaves with three stalked leaflets, which are three-lobed and variously cut. Flower stalks furrowed; flowers half-inch in diameter. Sepals five, spreading; petals five, with a small gland; achenes smooth, with a recurved beak. Distribution, Europe and America. Roadsides Paget and Warwick. Flowers in August; yellow.

In addition to the above there will be found in gardens various ornamental plants of this order; blue and white varieties of the Larkspur (*Delphinium consolida*), with the sepals petal-like, one of these and two of the petals being spurred; the Pæony (*Pæonia officinatis* var: *rubra*), and two species of Clematis (*C. flammula*) and (*C. japonica*).

Nat: Ord: 2 Anonacæ.

Trees. Sepals three; petals three to six. Stamens numerous; carpels at first separate, afterwards uniting to form a cone-like fruit. A few fruit trees belonging to this order have been introduced from the West Indies, and will be found cultivated. The Soursoy (*Anona muricata*). The Sugar-apple or sweet-soy (*A. squamosa*). The Cherimoyer (*A. cherimolia*). The Custard apple (*A. reticulata*).

Nat: Ord: 3 Papaveracæ.

Herbaceous plants with a milky juice. Sepals two to three, deciduous; petals four to six; stamens numerous; capsule one-celled with the stigmas radiate on the top. Seeds very numerous.

I. ARGEMONE.

A. mexicana (Stinging thistle). Annual. Erect, branched, spiny. Leaves half clasping the stem, pinnatifid, prickly, with white spots. Flower stalks growing out of the axils of the leaves. Sepals three, horned; petals six, large; capsule opening by valves at the top. Distribution, most warm countries. Common everywhere at all seasons. Flowers yellow.

The second growth of this plant often looks like a variety, the petals being very pale and the capsule much elongated.

II. PAPAVER.

Sepals two, deciduous; petals four, crumpled; stigma, six to twelve rayed.

1. *P. dubium* (Red poppy). Annual. Erect, with stiff hairs, six to twelve inches high. Leaves pinnatifid, lobes narrow, with few teeth. Flower stalks long. Petals in unequal pairs. Capsule oval, smooth. Distribution, Europe and America. Fields. Flowers scarlet, two inches in diameter; February to March.

2. *P. somniferum* (Poppy). Annual. Stout, erect, branched, smooth, three feet high. Leaves clasping the stem, sinuately

lobed, toothed. Capsule globose, smooth. Distribution universal. A weed in waste ground, and also cultivated for its medicinal properties, the petals fermented in syrup being much used by colonists for chest affections. Flowers large, variable in tint, pale purple and pink; August.

N. O. 4 *Fumariaceæ*.

Annual herbs, with a watery juice and much divided leaves. Flowers in racemes. Sepals two, deciduous; petals four, irregular, two inner united at their tips, inclosing the stamens; stamens six, in two bundles; ovary one-celled; styles slender, stigma entire. Fruit one-seeded; indehiscent globose.

I. FUMARIA.

1. *F. agraria*. Mitten (Fumitory). A slender, much-branched annual; stems intermingled two feet or more in length, climbing by the twisting petioles. Leaves irregularly bi-pinnate, segments flat. Flowers quarter inch long in loose racemes. Sepals two-toothed below, one-third as long and nearly as broad as the corolla tube. Fruit nearly round, rough when dry, with two shallow pits at the top. Distribution, Europe; habitat hedges, common. Flowers pink tipped with purple. *The flowers appear to be smaller and the stems and leaves more delicate than in the British species.* December to June.

2. *F. densiflora* D.C. (Fumitory). A delicate, diffuse annual, with branched, smooth stems. Leaves bi-pinnate, segments small and narrow. Racemes short, few-flowered, elongated in fruit. Sepals two, broadly ovate, sharply toothed, half as long as the corolla tube and wider than it. Fruit round, rough when dry, with two shallow pits at the top. Distribution almost universal; habitat waysides and cultivated ground. Flowers pale purple, darker at the tips. November to March.

N. O. 5 *Crucifera*.

Herbaceous plants. Leaves simple, alternate without stipules. Sepals four; petals four, placed crosswise; stamens six, four longer in pairs and two shorter solitary arising from a glandular disc. Ovary superior, one or two celled stigma, two-lobed. Fruit usually a long or a short two-celled, two-valved pod. Valves deciduous, leaving the seeds attached to the central partition; sometimes transversely jointed into one-seeded divisions.

This order furnishes a large number of useful vegetables, many of which are cultivated in Bermuda, such as the different varieties of cabbage, kohlrabi, turnip, radish, cress, &c. Watercress (*Nasturtium officinale*) has been grown in tanks at Mount Langton and other places. Ornamental plants are represented in gardens by the Wallflower (*Cheiranthus cheiri*), the Candy-tuft (*Iberis violaceæ* and *I. amara*), and the Virginian Stock (*Malcomia Maritima*).

A. Pod two-celled, much longer than broad opening throughout its length, not compressed at right angles to its divisions.

I. MATTHIOLA.

1. *M. Incana* (Stock). Stem one to two feet high, shrubby at the base, erect, branched; leaves oblong, lanceolate, hoary, entire. Flowers in racemes; sepals erect, with two pouches at the base; petals with long claws; pod three inches long, quarter inch broad, roundish, terminating in the thickened lobes of the stigma. Distribution, Europe; habitat seaside frequent. Flowers large, one to two inches, purple; May. Also cultivated in gardens together with the double-flowered variety (*M. Incana* var: *multiplex*).

II. SISYMBRIUM.

1. *S. officinale* (Wild mustard). Annual. Stem one to two feet, erect, branched, hairy; leaves toothed backwards, upper ones halbert-shaped, hairy; sepals erect, equal at base; pods in long, spreading, leafless racemes, narrow awl-shaped and pressed to the stem on short, thick stalks. Seeds numerous; one seriate. Distribution, Europe and the United States; habitat roadsides and waste ground. Flowers small, one-tenth of an inch, yellow; May.

III. SINAPIS.

1. *S. nigra* (Mustard). Annual. Stem two or four feet, rigid, branched, glabrous; lower leaves lyre-shaped, the terminal lobe much the largest, toothed; stem leaves stalked, lance-shaped, entire. Flowers in long racemes; sepals coloured equal at base, spreading; petals with long claws; pods awl-shaped, smooth, four-cornered, appressed to the stem. Distribution, Europe, introduced into United States; habitat fields, occasionally cultivated as a vegetable. Flowers, bright yellow, half-inch in diameter; May to June.

2. *S. arvensis* (Charlock). Annual. Stem one to two feet, erect, branched, hairy; leaves all lyre-shaped, pinnatifid or toothed. Flowers in racemes; sepals spreading; pods one and a half to two inches, many angled, three times as long as the compressed two-edged beak, on spreading stalks. Distribution, Europe, introduced into United States; habitat fields, also cultivated. Flowers, bright yellow, one-half to three-quarters of an inch; March to June.

b. Pod not much longer than broad, opening throughout its length, not compressed at right angles to its division.

IV. ALYSSUM.

1. *A. maritimum*. Annual. Covered with appressed hairs; stems one-half to one foot in length, half shrubby at the base, ascending; leaves somewhat hoary, acute, one to two inches long, one-sixth of an inch broad. Racemes lengthening in fruit; sepals deciduous; petals obovate; flower stalks slender and spreading, one-quarter of an inch long; pods nearly round, two-seeded, terminating in the slender style. Distribution, Britain; habitat roadsides, near the sea. Flowers, small, white, sweetly odorous; November to January.

c. Pod short, much compressed at right angles to its division, which is hence very narrow.

PLANTS OF BERMUDA.

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V. CAPSELLA.

Pod opening, many-seeded.

1. *C. Bursa-pastoris* (Shepherd's purse). Annual. Stem six to twelve inches, erect, this together with the leaves with scattered star-shaped hairs; leaves spreading next the root, toothed backward, pinnatifid, the upper ones toothed or entire clasping the stem; raceme erect, simple; fruit stalks elongating to half an inch; pods much compressed, triangular, quarter-inch long, many-seeded. Distribution, all temperate climates; habitat, a wayside weed, occasional. Flowers small white, one-ninth of an inch in diameter; November.

VI. SENEBIERA.

Pod twin, not opening, two-seeded.

1. *S. (coronopus) didyma* (Star of the Earth). Biennial. First year leaves appressed to the ground, star-like, second year stem prostrate, becoming half shrubby at the base, much branched, leafy, often covering the ground in patches, one and a half to two feet in diameter; leaves pinnatifid, lobes oblong, toothed; flowers in short racemes; petals often absent; stamens usually two only; pod half-inch, emarginate at base and top, separating into two hard lobes. Distribution, Europe and America; habitat waste places, a weed. Flowers very minute, white; January to March.

VII. LEPIDIUM.

Pod opening, two-seeded.

1. *L. Virginicum* (Pepper Grass). Annual. Slightly hairy; stem one to two feet, erect, at length branching; leaves, lower, reversely lanceolate, sharply toothed, those on upper part of the stem becoming much narrower, ciliate, with one to two pairs of teeth; racemes lengthening to four inches in fruit; petals oval, entire, sometimes absent; stamens usually two or four; pods one-sixth of an inch in diameter, nearly circular, emarginate; pedicels one-sixth of an inch long, spreading. Distribution, Jamaica and United States; habitat waysides and cultivated land, very common. Flowers small, one-twelfth of an inch, white; October to June.

D. *Pod transversely divided into one-celled, one-seeded joints.*

VIII. CAKILE.

Pod with two single-seeded joints.

1. *C. aequalis*. *Griesbach* (Scurvy grass). Annual. A smooth, fleshy plant; stem one to two feet, stout, branched, half erect; leaves, lower ones, two to three inches long, ovate, pinnatifid, the upper lance-shaped, coarsely toothed; sepals erect, two being slightly pouched at the base; petals oblong, emarginate; raceme lengthening in fruit to one foot; pod two-jointed, the upper joint lance-shaped, compressed, tapering into the style, three times the length of the lower wedge-shaped one and equalling it in breadth. Distribution, Jamaica, Turks Island, &c.; habitat, seaside rocks and sandy bays, common. Flowers lilac, half-inch in diameter;

October to June. *This plant appears to have been hitherto mistaken for the true Sourvy Grass (Cochleana officinalis), which latter I have been unable to verify.*

IX. RAPHANUS.

Pod with four to eight joints.

1. *R. raphanistrum* (Wild radish). Annual. Stem one to two feet, erect, hairy; leaves four to eight inches long, lyre-shaped and coarsely toothed; racemes leafless; sepals erect, equal; pods one to two inches long, with an awl-shaped beak, slightly constricted at the joints. Distribution, Europe, introduced into America; habitat, fields. Flowers half-inch in diameter, pale yellow; October to April.

The garden radish (R. Sativus) with pale purple flowers is also often met with as an escape from cultivation.

Nat : Ord : Tamaricaceæ.

Shrubs or small trees. Leaves very small, scale-like, overlapping, without stipules; flowers in axillary spike like panicles; sepals four to five, overlapping in bud; petals four to five; stamens four to five, sometimes double that number, inserted in a glandular disc; ovary superior, one-celled; styles three to four; capsule three-valved; seeds many.

I. TAMARIX.

1. *T. Gallia* (Tamarisk). An evergreen shrub, eight to ten feet high; branchlets slender and feathery, leaves on the branchlets extremely minute, closely overlapping, triangular and keeled, on the older wood one-eighth of an inch larger, awl-shaped; flowers in catkin-like, obtuse spikes, one to one and a half inches long. Distribution, England and shores of the Mediterranean; habitat, hedges and avenues. Flowers pink, one-eighth of an inch in diameter; May to June.

Introduced, a favourite fence in exposed or sandy situations, very handsome and not injured by salt spray.

Nat : Ord : Caryophyllaceæ.

Herbs with swollen joints. Leaves quite entire, in opposite pairs; sepals five, sometimes united into a five-toothed calyx; petals five, inserted under the ovary (absent in *Sagina*); stamens usually ten, inserted with the petals; seeds many, small, granulate. The Pink (*Dianthus caryophyllus*) and the Sweet William (*D. Barbatus*) will be found cultivated in flower gardens.

I. SILENE.

Sepals united, forming a five-toothed inflated calyx.

1. *S. Gallica*. An annual, hairy, viscid plant; stem one to two feet, erect, branched; leaves oblong, spoon-shaped; flowers in leafy, one-sided racemes; calyx with ten broad nerves and five bristly teeth; petals five, nearly entire, furnished with small scales; stamens ten; styles three; capsule ovoid, three-celled at base,

opening at top by six teeth. Distribution, Southern Europe and West Indies; habitat, South Shore. Flowers white; March to May. This and the closely-allied *S. Anglica* are also found occasionally in gardens.

II. CERASTIUM.

Sepals not united; capsule cylindrical, ten-valved.

1. *C. viscosum*. A small, hairy annual; stem erect, branched, four to six inches high; leaves not stalked, oval, three-quarters of an inch long and half as broad; flowers in sub-capitate cymes, flower-stalks shorter than the sepals; sepals quarter-inch long, silky, acute; petals five, narrow bifid, as long as the sepals; stamens ten; styles usually five; capsule cylindrical, nearly twice as long as the sepals, opening at the top by ten teeth. Distribution, Europe, introduced into West Indies and United States; habitat, a general weed throughout the Islands. Flowers white; February to May.

III. STELLARIA.

Sepals not united; petals bifid; capsule globose.

1. *S. media* (Chickweed). Annual. Stems six to eighteen inches, procumbent, branched, with an alternate line of hairs; leaves ovate, pointed, the lower stalked, upper not stalked, one-third to one-half an inch long; flower-stalks one inch long from axils, also with a line of hairs; sepals five, hairy; petals five, bifid, two-thirds the length of sepals; stamens usually five, sometimes three; styles usually three; capsule a little longer than sepals, opening by twice as many teeth as there are styles. Distribution, Europe, America, and introduced into West Indies; habitat, a common weed in cultivated ground. Flowers white; November to April.

IV. ARENARIA.

Sepals not united; petals entire; capsule globose.

1. *A. serpyllifolia* (Sandwort). An annual. Stem six inches long, half erect, branched, covered with soft recurved hairs; leaves quarter-inch long, not stalked, oval, pointed; flowers in leafy cymes; sepals five, pointed, longer than the five minute entire petals; capsule opening, with three recurved bifid teeth; stamens ten, arising from a disc. Distribution, most temperate and cold climates; habitat, old walls and roadsides. Flowers white, minute, one-sixth of an inch; December to March.

V. SAGINA.

Sepals not united, petals entire or absent, capsule four-valved.

1. *S. apetala*. *sub-sp. ciliata* (Pearl-wort). A small annual, growing in grass-like tufts; stems numerous, wiry, thread-like, two inches high, erect; leaves quarter-inch long, very narrow, ciliate; flower-stalks hair-like, as long as the leaves, from the alternate axils of which they spring; sepals four, pointed; petals four, minute or absent; stamens four; styles four; capsule opening

to the base with four valves. Distribution, most temperate and cold countries; habitat, a minute wayside weed. Flowers greenish-white; December to March.

Nat: Ord: 8 *Linaceæ*.

Slender herbs with alternate, narrow, entire leaves; sepals five, overlapping; petals five, with long claws, twisted, deciduous; stamens five, united into a tube at the base, which is inserted under the ovary; styles five; ovary five-celled; capsule becoming many-celled, with one seed in each cell.

I. LINUM.

1. *L. usitatissimum* (Flax). Annual. Stem eighteen inches, solitary, branched above, erect; leaves alternate, narrow, lance-shaped, without stipules; flowers numerous, in branched cymes; sepals ovate, acute; petals wavy, soon falling off; stamens five, alternate with the petals, opposite to which latter are five glands (aborted stamens?). Distribution almost universal; habitat, waysides occasional, perhaps a remnant of former cultivation. Flowers purple; May.

A handsome species of the above—*L. grandiflorum*—with large scarlet flowers, is grown in the Public Park, Hamilton. April.

Nat: Ord: 9 *Malvaceæ*.

Herbs, shrubs, or trees, with tough fibrous stems, usually covered with stellate down; leaves alternate; calyx five-lobed, valvate in bud, usually with three to five or more bracts on the outside, forming an involucre; petals five, adhering at base to column of stamens; filaments of stamens uniting into a long tube, inserted under ovary; anthers one-celled; pollen grains large, spherical, covered with spines—a beautiful object for the microscope; styles numerous, free or united; fruit consisting of many combined dry carpels or a many-seeded capsule.

The plants of this order are all noted for their mucilaginous properties, and many for their valuable fibre; they also contribute some of our most ornamental garden shrubs. The Hollyhock (*Althæa rosea*), with gaudy red flowers; the Cotton plant (*Gossypium herbaceum*), with yellow flowers; *Abutilon striatum*, a tree with three-lobed leaves and orange-yellow flowers striped with red; also various species of *Hibiscus*, which have been introduced from West Indies. In the grounds below Mount Langton may be seen three splendid trees, 80 feet high? of the silk cotton tree (*Bombax ceiba*), which belong to the closely-allied order of *Bombacæ*.

A. Fruit consisting of numerous dry carpels rotate round a central axis.

I. SIDA.

Involucre none, calyx five, cut angular.

1. *S. Carpinifolia* (Wire-weed). A perennial herb or small shrub, with a long, wiry root; stem erect, branched, one to two feet high; leaves on short stalks, variable, lance-shaped, unequal-sided,

toothed above the base and covered with star-shaped down; stipules bristle-like; flowers axillary, shortly stalked; calyx with five acute teeth; petals longer than calyx; carpels eight to ten each, with two sharp teeth. Distribution, West Indies and most warm countries; habitat, a troublesome weed and wayside shrub. Flowers half-inch, yellow; all seasons.

II. ALTHEA.

Involucel of six to nine bracts, united at base.

1. *A. Officinalis* (Marsh-mallow). A stout, soft, downy perennial plant; stem two to three feet, erect; leaves on short stalks, broadly ovate, three to five lobed, toothed; flowers axillary; sepals five, ovate; petals large. Distribution, Europe, America, etc.; habitat, marshes. Flowers pale rose colour; August.

III. MALVA.

Involucel of three bracts, not united at base.

1. *M. Caroliniana*. A prostrate, creeping annual; stem one foot, branching and rooting at joints; leaf stalk one inch, leaves palmately five-lobed, three-quarters of an inch in diameter, lobes toothed; hairs simple on upper, star-shaped on under surface; flowers axillary, on one-inch stalks; sepals five, acute. Distribution, Southern United States; habitat, waste ground. Flowers dark red; December to March.

2. *M. sylvestris* (Mallow). An erect, perennial, herbaceous plant. Stems hairy, two to three feet; leaves sharply angular, with five to seven lobes, serrate, two to three inches in diameter; flowers several, in axillary clusters; calyx five-toothed; petals large, reversely and irregularly heart-shaped; carpels smooth. Distribution, most temperate climates; habitat, gardens, and as an escape in waste places. Flowers purple, one and a half inches in diameter; May to July.

3. *M. rotundifolia* (Mallow). A prostrate, perennial plant. Stems hairy, one to one and a half feet long; leaves two to two and a half inches in diameter, roundish, bluntly five-lobed, serrate, on long stalks; hairs simple on upper surface, geminate on lower surface; flowers few, axillary; calyx acutely five-toothed; carpels hairy. Distribution, Europe and America; habitat, roadsides, etc., common. Flowers pale rose colour, one-quarter to half-inch in diameter; March to June.

B. *Fruit a five-celled, many-seeded capsule.*

IV. HIBISCUS.

Involucel five-leaved.

1. *H. mutabilis* (Changeable rose). An erect shrub or small tree ten to fifteen feet high. Stems branching; leaves heart-shaped, acutely five-angular, toothed, covered with many-branched hairs; flower-stalks as long as the leaves; bracts narrow; calyx with five ovate, acute divisions; petals oval, veined; styles five, capitate;

capsule surrounded by the closely-applied calyx. Distribution, East Indies; introduced, most warm countries; habitat, gardens, shrubberies, and occasionally hedges. Flowers large, four inches in diameter, red, changing to white. A double-flowered variety of the above (*H. flore pleno*) and several other species of *Hibiscus* are cultivated, *H. rosa-sinensis*, with scarlet flowers and long staminal tube, *H. (Paritium) elatum*, and *H. populneus*.

Nat: Ord: 10 *Tiliaceae*.

Shrubby plants (or trees) with alternate, stipulate leaves; sepals five; petals five; stamens many, hypogynous; ovary five-celled; stigma five-toothed; fruit few-seeded.

I. TRIUMFETTA.

1. *T. althæoides* (Burr bush). A shrubby plant three to four feet high, covered with stellate down. Stems erect, branched, tough; leaves two to three inches, velvety, roundish, three-lobed, upper narrower, more entire, and all irregularly toothed; flowers in short, crowded and interrupted racemes; sepals five, reddish brown, ending in spine-like teeth; petals five; stamens ten, surrounded at base by a small cup; fruit globose, covered with hairy, hooked spines, two-celled, four-seeded. Distribution, West Indies and other tropical countries; habitat, a wayside weed, common. Flowers yellow, quarter-inch; July to November.

Nat: Ord: 11 *Guttiferae*.

Trees with opposite undivided leaves; sepals and petals each usually four in imbricated whorls; stamens many; fruit a drupe or few-seeded berry. The Mammee apple (*Mannea Americana*), of which one or two trees are to be found here, belongs to this order.

I. CALOPHYLLUM.

1. *C. calaba* (Galba). A tree twenty to thirty feet high, branching from the ground upwards; leaves oblong, blunt, leathery, with feather-like veins, three inches long and half that width; racemes axillary, few-flowered, shorter than leaves; sepals four, coloured; petals four; stamens numerous; fruit a one-seeded drupe one inch in diameter (eatable). Distribution, West Indies; habitat, hedges, common. Flowers white, odorous, half-inch in diameter.

Nat: Ord: 12 *Hypericaceae*.

Herbs, shrubs, or trees. Leaves opposite, entire, with transparent dots, without stipules; sepals imbricated, four to five (six), unequal; petals four to five, very unequal-sided; stamens numerous, sometimes united into several parcels; styles distinct, two to five; fruit capsular, many-seeded. A gamboge tree (*Vismia Guianensis*) may be seen in Government Gardens, St. George's.

I. HYPERICUM.

Calyx five-parted; petals five; stamens in three to five bundles.

1. *H. perforatum*. An erect, perennial plant. Stems two-edged; leaves oblong, blunt, with numerous transparent glands; cymes

many-flowered; sepals lance-shaped, acute, united at base; petals five, unequal-sided, dotted; stamens united at base into three bundles; styles three; ovary three-celled; capsule many-seeded. Distribution, Europe and United States; habitat, waste ground, rare. Flowers yellow, one inch in diameter; July.

II. ASCYRUM.

Sepals six; petals four; stamens almost distinct.

1. *A. Hypericoides* (St. Andrew's Cross). A small branching shrub two to four feet high; stems brittle, scaly, and somewhat winged between the nodes; leaves one-third to one-half inch long, one-twelfth of an inch wide, reversely lance-shaped, sessile, with two small glands at base; flowers terminal; sepals six, two outer very small, awl-shaped, next pair large, one-third to one-half inch, oval, pointed, inner pair smaller, lance-shaped; petals four, contorted; capsule one-celled, seeds numerous. Distribution, West Indies; habitat, marshes, common, appears to be indigenous. Flowers yellow, one-half to three-quarters of an inch; September to December.

Nat: Ord: 13 Sapindaceæ.

Herbs, shrubs, or trees. Leaves alternate, without stipules; flowers small; sepals four; petals four or more, separated from stamens by a disc; stamens eight; style one; capsule usually three-celled, few-seeded. The Soapberry (*Sapindus Saponaria*), Horse Chestnut (*Æsculus hippocastanum*), and the Liche (*Diospyros Litchi*), belong to this order.

I. CARDIOSPERMUM.

Sepals four, irregular; petals four; stamens interior to gland; cells of capsule one-seeded.

1. *C. haliacabum* (Balloon Vine). A delicate climbing annual. Stem two to three feet long, slender, smooth, deeply four-grooved; leaves alternate, leaf-stalk one and a half inches long, leaflets biternate, the divisions deeply and irregularly few-toothed, hairs few, simple; flowers in axillary corymbs with two crosier-like tendrils near top of stalk; sepals four, two inner larger; petals four, with a scale at base; stamens eight; capsule three-celled, inflated, bladder-like, three-quarters of an inch in diameter; seeds solitary, globose, marked with a heart-shaped spot. Distribution, West Indies and other tropical countries; habitat, waysides; lower parishes, frequent. Flowers white, one-third of an inch; June.

II. DODONCEA.

Sepals four; petals none; stamens eight, inserted in disc; cells of capsule two-seeded.

1. *D. Burmanniana*, *D.C.* An erect, branching shrub, four to six feet high; leaves sessile, gummy, reversely lance-shaped, entire, two and a half to three inches long, one-half to three-quarters of an inch wide; capsule winged, roundish, three-quarters of an inch in diameter, wings broader above than near the base, terminal

sinus open; flower-stalks one inch. Distribution, Jamaica, Mexico, etc.; habitat, a frequent shrub in sandy places, easily mistaken by casual observer for Oleander when not in flower. Flowers green; June to August.

Nat : Ord : 14 *Meliaceæ*.

Trees with pinnate leaves. Calyx five-parted; petals five; stamens ten, inserted into a disc and cohering together to form a tube; style simple; fruit a drupe.

I. MELIA.

1. *M. Azedarach* (Pride of India). A large tree, thirty feet high. Leaves twice pinnate, leaflets lance-shaped, three to six pairs, and a terminal one which is long-pointed, few-toothed; flowers in paniculate cymes; petals oblong; staminal tube with twenty teeth, on the inner surface of which are ten anthers; ovary five-celled; drupe globose, half-inch in diameter, one-seeded, seed five-angled. Distribution, shores of Mediterranean and Southern United States; habitat, common throughout the Islands. Flowers lilac; June and July.

Nat : Ord : 15 *Aurantiaceæ*.

Trees or shrubs, with evergreen, shining, alternate leaves, dotted with transparent glands; stipules none; calyx five-leaved; petals five, sessile; stamens ten or more, inserted into a hypogynous disc. Fruit a many-celled berry, usually edible, with an acid pulp.

I. CITRUS.

Stamens ten or more, collected into several bundles by adhesion of filament; blade of leaf jointed to leaf-stalk.

1. *C. Limonum* (Lemon). A small tree with rough, irregular branches, armed with stout spines two inches long; leaves alternate, oblong, three and a half inches long by half that width, slightly toothed, abounding in oil glands, leaf-stalk not winged; flowers axillary; calyx five-leaved; stamens in several bundles. Fruit rough, oblong, nipple-shaped at end, with a thick rind and acid pulp. Distribution, warm countries; habitat, hedges and thickets. Flowers white; June and July.

2. *C. Vulgaris* (Seville Orange). A tree twenty to thirty feet high, furnished with spines; leaves oblong, acute, toothed, leaf-stalk with large marginal wings; flowers resembling *C. Limonum*. Fruit large, round, smooth, with thin rind and bitter pulp. Distribution, warm countries; habitat, thickets, etc. Flowers snow-white, sweet-scented; June and July.

To this genus also belongs the Sweet Orange (*C. aurantium*), with broadly-winged leaf-stalks and well-known fruit; the Lime (*C. Limetta*), with leaf-stalks not winged and small, smooth fruit with thin rind. The following are also said to be cultivated: The Citron (*C. medicus*), Shaddock (*C. decumana*), Bergamotte (*C. bergamia*), and other species,

Years ago Bermuda appears to have been famed for its oranges and lemons. Waller, in his well-known poem, wrote of them thus:

"Bermuda, walled with rocks, who does not know?
That happy island where huge lemons grow;
And orange trees, that golden fruit do bear,
The Hesperian Gardens boast of none so fair."

The practice of cutting down cedars for firewood is said to have greatly damaged these plantations by depriving them of the necessary shelter. Blight has also done great mischief to the trees, and no attention appears now to be given to the cultivation of these fruits in Bermuda.

II. MURRAYA.

Stamens ten, distinct; leaves compound.

1. *M. Exotica* (Martinique Laurel). An evergreen shrub, four to six feet high; leaves alternate, irregularly pinnate, leaflets five, leathery, ovate, entire; flowers numerous in corymbs; sepals five; petals five; stamens ten, distinct, awl-shaped; berry one to two celled; one to two seeded. Distribution, East and West Indies; habitat, shrubberies, etc., frequent. Flowers white, fragrant; August.

The Wampee (*Cookia punctata*), a few trees of which have been introduced, also belongs to this order.

Nat: Ord: 16 Oxalidaceae.

Small plants usually abounding in oxalic acid, and hence called *Sourgrasses*. Leaves composed of three leaflets (shamrocks); flowers regular; sepals five; petals five, equal, twisted, clawed; stamens ten, more or less adhering together and in two series, the inner five opposite petals, and longer than outer ones; ovary of five united carpels; styles five; fruit a five-celled, five-angled capsule, bursting with elasticity by five to ten valves, not beaked; seeds few in each cell.

I. OXALIS.

Leaves alternate, leaflets three, heart-shaped, jointed to the petiole at their base.

1. *O. Violacea*. Linn. (Sorrel). A stemless plant, leaves and flower-stalks arising from an underground perennial bulb; bulbs pink, scaly, half-inch in diameter, very prolific; petiole four inches high, crowned with the three obcordate leaflets, the latter one and a quarter-inch broad, half-inch sinus to base; flower-stalks slender, five to six inches, terminating in umbel of six to eight flowers; sepals five, with an anther-like gland at tip; petals obovate; stamens all longer than styles; capsule few-seeded, seldom formed. Distribution, North America and (*O. Martiana*) West Indies? habitat, a most troublesome weed in cultivated ground, on account of bulbs very difficult to eradicate. Flowers violet, half-inch in diameter; November to June.

2. *O. repens*. *Zucc.* (Creeping Sorrel). A small, creeping plant, emitting long rooting stems and underground stolons, which are perennial, stems matted, branching at nodes; petioles slender, hairy; leaflets three, small, one-quarter to one-third of an inch in diameter, obcordate, hairy, ciliate at margin; flower-stalks slender, one to two flowered, jointed or forked at middle where are two small leafy bracts; sepals lance-shaped, acute; petals twice the length of sepals; stamens ten, the inner five being equal in length to hairy styles; capsule downy, cells about six-seeded. Distribution, Jamaica, Ascension, etc.; habitat, a troublesome weed, very common. Flowers quarter-inch, yellow; October to March.

3. *O. Dillenii*. *Jacq.* An annual, compact plant, all parts covered with soft hairs; stems four to six inches, rooting and branching at the tufted base only, then erect; petioles slender, one and a half inches long; leaflets half-inch in diameter, not ciliate; flower-stalks slender, two and a half inches, two-flowered, forked much above the middle; stamens longer than styles; capsule half-inch, cells eight to ten seeded, seeds red, transversely wrinkled. Distribution, North America; habitat, St. David's, common. Flowers yellow, half-inch; May.

A handsome species of the above genus (*O. Cernua*) is frequent in gardens, the stout, erect flower-stalk terminates in a many-flowered umbel of yellow drooping flowers, one and a half inches in diameter.

Nat : Ord : 17 *Geraniaceae*.

Herbaceous plants, stems swollen and brittle at the nodes; leaves opposite or opposed to flower-stalks; sepals five, persistent; petals five; stamens ten, united at base, five larger; styles five; ovary five-celled, cells one-seeded. Fruit consisting of five one-seeded carpels, which are prolonged outside of a woody axis into a beak; from this axis they separate, when ripe, at the base, curling upwards to the tip, where they remain adherent.

To this order belong the garden varieties of Pelargonium, and the single and double Geraniums which abound in our gardens. The former are distinguished by having only seven fertile stamens and irregular flowers.

I. GERANIUM.

Flowers regular; stamens ten, fertile, alternating with glands.

1. *G. Carolinianum* (Wild geranium). An annual, spreading plant, softly pubescent; stem branched, eight to twelve inches long, ribbed, at length prostrate; stipules pointed, hairy; leaves opposite, on long petioles, roundish, five-lobed almost to base, lobes irregularly cut; flower-stalks axillary, short (or long), dividing into two short one-flowered pedicels, with leafy bracts at fork; sepals five, silky, with long awns; petals five, oblong, wedge-shaped; carpels obscured with long silky hairs. Distribution, United States; habitat, waysides and waste places, common. Flowers half-inch, pale lilac, veined; March to June.

Closely allied to the foregoing is the Natural Order *Balsaminaceæ*, distinguished from *Geraniaceæ* by irregular flowers, spurred and coloured sepals, and five stamens. This order is represented in our gardens by the many-coloured varieties of Balsam (*Impatiens hortensis*); when ripe the capsules burst on being touched and scatter the seeds with considerable force.

The common garden Nasturtium (*Tropæolum majus*) is also nearly allied to *Geraniaceæ*, and distinguished by the long spurred calyx and three-lobed beakless fruit, which latter is used as a substitute for capers.

Nat : Ord : 18 *Capparidaceæ* (Tribe *Cleomeæ*).

Herbs with palmately-divided leaves; flowers in terminal racemes; sepals four; petals four; stamens numerous (six only in some species), unequal in length, inserted below the ovary; ovary composed of two united carpels, to the inner surface of which the ovules are attached in two opposite lines; fruit a one-celled, many-seeded, pod-shaped capsule, the two valves of which separate from the persistent placenta.

I. CLEOME.

1. *C. Viscosa*. An erect, annual herb, all parts densely clothed with sticky, glandular hairs; stem twelve to eighteen inches, many-ribbed; raceme leafy, terminal; leaves palmately divided to base into three to five obovate entire segments; sepals four, purple at base; petals four, leaving space for a fifth; stamens fifteen to twenty, very irregular, arising from glandular neck of ovary; stigma disc-shaped; capsule three inches long, quarter-inch in diameter, round, tapering, ribbed; seeds very numerous. Distribution, West Indies; habitat, fields around Hamilton. Flowers yellow, half-inch in diameter; September.

Nat : Ord : 19 *Vitaceæ*.

Shrubby plants climbing by means of tendrils, which are opposite to the leaves; leaves simple or compound; calyx entire or four to five toothed; petals four to five, inserted on outside of hypogynous disc, sometimes cohering at top, and early falling off; stamens four to five, opposite the petals and inserted on disc; style simple; ovary two-celled, cells two-seeded; fruit a two to four seeded berry.

The Grape Vine (*Vitis vinifera*) is the most important member of this order. The grape thrives well in these islands, and would no doubt be more largely cultivated than at present were it not for the depredations of birds, rats, and other enemies.

Cissus Discolor, a pretty variegated creeper, has also been introduced as a garden ornament.

I. AMPHELOPSIS.

1. *A. quinquefolia* or *A. hederacea* (Virginia creeper). A shrubby, perennial vine, stem ascending walls, palings, etc., to which it adheres by discs on end of tendrils; leaves digitate, with three to

five smooth leaflets, the latter oblong, pointed, and coarsely toothed; flowers in compound panicles; calyx minute, entire; petals five, at length distinct; stamens five, with large anthers; berry small. Distribution, North America; habitat, sides of houses, fences, etc., to which its crimson leaves and stems give a handsome appearance; cultivated, and also as an escape. Flowers insignificant, pale green; June and July.

SUB-DIVISION II.—CALYCIFLORE.

Stamens either inserted into the calyx (perigynous), which is usually inferior to the ovary, or arising from a disc superior to the ovary (epigynous).

Nat: Ord: 20 Anacardiaceæ.

Shrubby plants or trees with a milky or acrid juice; leaves simple or compound, alternate without stipules; flowers in panicles, usually dioecious or polygamous; sepals four to five; petals four to five; stamens four to five, inserted into a disc at base of calyx; styles and stigmas usually three; ovary superior, one to several celled, ovules single in each cell; fruit a one-seeded drupe.

The Mango (*Mangifera Indica*), which is now cultivated in all tropical countries for its fruit, belongs to this order.

I. RHUS.

1. *R. toxicodendron* (Poison Oak or Poison Ivy). A perennial, climbing vine, stem attaching itself by means of ivy-like rootlets to trees, rocks, etc., up which it rises to a considerable height; leaves trifoliate, petiole red and velvety, leaflets three, broadly ovate, entire, pointed, velvety beneath, the end leaflet stalked and distant; flowers in axillary branched panicles; calyx five partite; petals five; stamens five, inserted into disc; styles three, short; fruit a nearly dry drupe, size of a pea. Distribution, North America; habitat, thickets, hedges, old walls, etc. Flowers greenish-yellow; May and June.

The juice of this plant is very acrid and irritating when applied to eyes and tender skin, but probably is not so dangerous as is supposed by many of the natives, some of whom regard it with almost superstitious fear.

Nat: Ord: 21 Leguminosæ.

Herbs, shrubs, or trees, with alternate, usually compound leaves and leafy stipules; sepals five, more or less united, and irregular; petals five, sometimes regular, usually irregular and papilionaceous (*i.e.*, the upper petal large, broad, erect or bent back, forming the standard; two parallel, side petals called the wings, overlapping the two inferior ones, which are usually united by their lower margin, called the keel, and enclosing the stamens: *the garden pea is a good example of this form of flower*); stamens ten, perigynous, sometimes distinct, usually united by their filaments into a tube, the upper one frequently distinct; ovary one-celled, superior,

enclosed in staminal tube, one to many seeded; style and stigma simple; fruit a pod, opening along one or both edges; seeds without albumen, the seed leaves (cotyledons) usually appearing above the ground and becoming green like the leaves.

This is one of the largest and most useful families of plants; they are easily distinguished in most cases by the peculiar shape of flower, characteristic pod, and pinnate leaf.

The Garden Pea (*Pisum sativum*), Six-week Bean (*Phaseolus vulgaris*), and Broad-bean (*Faba vulgaris*), are cultivated with considerable success in these islands during the cooler months; while in summer their place is taken by the somewhat inferior Black-eye Pea (*Dolichos sphaerospermus*). The latter is frequently met with in fields, where its twining stems, becoming matted and interwoven, cover a considerable space; the leaflets are stalked, three in number; the flowers variable yellow, or white blotched with purple, and the pods long, round, slender and many-seeded. The Pigeon Pea (*Cajanus Indicus*) and Scarlet-runner (*Phaseolus multiflorus*) are also cultivated.

As ornamental garden plants the following are frequently met with: the Blue Pea (*Clitoria ternatea*), the Broad-leaved Everlasting Pea (*Lathyrus latifolius*), with pink flowers, winged leaf-stalk and pair of leaflets; also the Sweet Pea (*Lathyrus odoratus*).

Several large timber and fruit trees have also been introduced; perhaps the most striking of these is the Tamarind tree (*Tamarindus Indicus*), a large and beautiful tree with far-spreading branches densely clothed with bright green leaves, consisting of twelve to sixteen pairs of oblong leaflets, easily recognised by their peculiar sub-acid taste; the flowers in September form a pleasing contrast; few-flowered racemes, the three pale yellow petals prettily veined with red; the pod is one to four seeded.

The American Acacia tree (*Robinia pseudo-acacia*), with pendulous racemes of sweet-scented white flowers (Public Buildings, etc.); the West Indian Locust tree (*Hymenaea conbaril*), a stout tree with gaunt, almost naked branches and leaflets in pairs, may frequently be seen around country houses. In the Bauhinias which grow in the Public Park the two leaflets seem to be combined into a deeply two-lobed leaf. *Wistaria* (*Glycine*) *frutescens*, a shrub with drooping racemes of lavender flowers, the Laburnum tree, the Balsam of Peru tree (*Smyospermum* or *Myrospermum Peruiferum*), and the St. John's Bread (*Ceratonia Siliqua*), have also been introduced locally.

SECTION I.—*Flowers papilionaceous, petals overlapping each other in the bud, the upper petal (standard) being outside.*

A. *Leaves with three leaflets (trifoliate); flowers small, collected in heads or in axillary racemes.*

I. TRIPOLIUM.

Flowers densely clustered in terminal (or axillary) heads; pod small, nearly enclosed in calyx.

1. *T. pratense* (Red clover). A biennial, prostrate plant; stems twelve inches long, ribbed, hairy; stipules membranaceous, with

bristle-like points one inch; leaflets one and a half inches, oval, finely toothed, hairy, with white markings; flowers numerous in dense terminal heads one inch in diameter, supported by a pair of opposite leaves and their enlarged bract-like stipules; calyx-tube strongly nerved, with five unequal, bristly teeth; wing petals longer than keel; stamens ten, nine united, the tenth upper one free; pod small, opening by top falling off, few seeded. Distribution, Europe and North America; habitat, fields and waste places. Flowers purple; May and June.

II. MEDICAGO.

Flowers in racemose clusters at end of axillary flower-stalk; pod spirally twisted or coiled.

1. *M. lupulina* (Black clover). A procumbent annual; stem slender, branched, one to two feet long; stipules awl-shaped; petiole one-quarter to one-third of an inch; leaflets half-inch long, obovate, finely toothed and pointed; flower-stalks two inches, terminating in a cluster of small flowers; calyx teeth five, nearly equal; pods one-seeded, kidney-shaped, not spiny, one-eighth of an inch, black when ripe. Distribution, Europe and North America; habitat, fields, grass-plots, etc., very common. Flowers one-eighth of an inch, yellow; November to April.

2. *M. denticulata*. A procumbent annual; stems radiating two to three feet, wiry, polished, closely appressed to the ground, branching and interwoven; stipules clasping the stem, cut into many narrow-pointed segments; petiole one inch, leaflets three-quarters of an inch, broadly obovate, midrib and veins produced into teeth, the third leaflet distant; flower-stalks length of petiole, terminating in a few-flowered umbel; pod flat, spirally coiled two to three times, forming a round head quarter-inch in diameter, and armed with two rows of spines. Distribution, Europe and America; habitat, fields and waste places. Flowers orange-yellow; November to April.

III. MELILOTUS.

Flowers in long racemes at end of axillary flower-stalk; pod straight, short.

1. *M. officinalis* (Sweet Melilot). An erect, branched, annual herb, two feet high; stipules awl-shaped; petiole one inch, leaflets two-thirds of an inch, narrowly oblong or obovate, toothed above the base; flower-stalk one and a half inches to raceme, the latter three-quarters of an inch long; calyx five-toothed, ribbed; petals nearly regular, twice the length of calyx; pod oval, one to two seeded. Distribution, Europe and North America; habitat, fields and waste places. Flowers orange-yellow; November to April.

Cattle are very partial to the four plants last described, but Melilot, if eaten in large quantities, imparts an unpleasant flavour to the milk of cows.

B. *Leaves trifoliate; flowers large, arising from a knob which protrudes from stem; calyx with two bracts at base; stamens nine and one (diadelphous); pod two-valved.*

IV. VIGNA.

1. *V. luteolus*. Annual. Stems slender, twining, two to three feet long; leaflets two inches long, ovate, pointed, smooth, with small stipules at base; flower-stalks axillary, ending in a few-flowered cluster; calyx bell-shaped, four-toothed; standard petal reflexed, with two thickened appendages at base; style hairy; pod nearly cylindrical, downy, two inches long, one-quarter of an inch broad, eight to ten seeded, seeds smooth, shining. Distribution, West Indies and South America; habitat, marshes near Hungry Bay. Flowers one-half to three-quarters of an inch, yellow; May.

V. DOLICHOS.

1. *D. (Canavalia) roseus* (Bay-bean). A perennial, creeping plant; stem three to six feet long, rooting among sand and stones of seaside; leaflets roundish, blunt, smooth; inflorescence as in *Vigna*; calyx two-lipped, upper two lobed, lower three toothed; standard petal as in *Vigna*; upper stamen partly adhering to column; pod large, four to six inches long, one inch broad, compressed, three-keeled at back, seeds surrounded with pithy tissue, compressed, roundish, one inch diameter, dark brown; frequently found in debris on beaches. Distribution, most tropical countries; habitat, seaside, frequent. Flowers one inch, purplish-red; June.

Dolichos Lablab (the white-flowered variety) is cultivated in gardens east of Harrington Sound.

VI. PHASEOLUS.

1. *P. semierectus*. A perennial plant, half shrubby at base, stem twining and ascending among trees, etc., ten to twelve feet; leaflets ovate, pointed; flower-stalks axillary, three to four inches long, terminating in racemed cluster; calyx with five acute teeth; standard petal roundish, as in *Vigna*; keel including stamens and style spirally twisted; pod narrowly cylindrical, three inches long. Distribution, West Indies; habitat, woods near caves (Joyce's). Flowers half-inch, purple; June.

Occasionally in hedges and frequently in gardens may be seen the Coral tree (*Erythrina corallodendron* or *E. speciosa*), which belongs to the above section; the flowers appear before the leaves, and, being bright scarlet in colour, present a very striking appearance. The tree is 20 to 30 feet high, with spreading branches; leaflets three, broadly ovate, smooth; flowers racemed in whorls of six; calyx without teeth; the standard petal not reflexed, giving an unexpanded appearance to the corolla; pod constricted between the scarlet seeds.

Two other species, *E. Indica* and *E. Christa-galli*, are also said to be grown in gardens here.

c. *Leaves pinnate, leaflets more than three.*

VII. INDIGOFERA.

Leaves pinnate, ending in a terminal leaflet; stamens diadelphous; pod two-valved, seeds separated by false divisions.

1. *Indigofera anil* (Indigo). A small, erect, branched shrub, three feet high; leaves with three to seven pair of opposite leaflets

the latter oblong, spoon-shaped, whitish beneath with appressed down; stipules awl-shaped; racemes axillary, not stalked, many flowered; calyx with five triangular teeth, standard roundish, keel with an awl-shaped spur on each side; pods bow-shaped, cylindrical, half-inch long, narrow, four to six seeded. Distribution, introduced into many tropical countries; habitat, fields and waste ground, probably the remains of former cultivation. Flowers small purplish; August and September.

VIII. VICIA.

Leaves ending in a tendril; stamens diadelphous; pod two-valved, without divisions between seeds.

1. *V. sativa* (Vetch). An annual plant, climbing two to three feet; stems slender, weak; stipules four, toothed; leaves with six to eight pairs of leaflets and ending in a tendril, leaflets narrowly oblong, blunt, with the midrib protruding; flowers axillary, single, or in pairs; calyx with five narrow teeth as long as the tube; wings of corolla adhering to keel; upper stamen partly free; pod one to two inches long, narrow, about six-seeded. Distribution, generally introduced as fodder in warm and temperate climates; habitat, fields, etc. Flowers one-half to three-quarters of an inch, purple; January to April.

IX. LOTUS.

Leaves with five leaflets and three-leaved bracts; pod straight, cylindrical, with false divisions between seeds.

1. *L. Jacobæus*. An erect evergreen plant; stems slender, round, downy; leaf with five narrow, entire, palmately-arranged leaflets; bracts trifoliate, the divisions one inch long, very narrow, entire; cymes axillary, three or four flowers collected at end of long stalks; calyx two-lipped, with five spreading teeth; keel of corolla curved inwards, protruding at sides; upper stamen free; pods in bunches of three or four, straight, one and a half inches long with a bristle-like point, eight to ten seeded. Distribution, Cape Verde Islands, and frequently cultivated as a garden flower; habitat, occasionally in cultivated ground, as a weed. Flowers one-half to three-quarters of an inch, reddish-brown.

X. SOPHORA.

Leaves pinnate with a terminal leaflet; stamens distinct; pod much contracted between the seeds.

1. *S. tomentosa*. A small, prostrate, evergreen shrub, all parts densely clothed with soft hairs; stems branched, woody, two to three feet; stipules none; leaves with about six pairs of leaflets, the latter roundish, quite entire, blunt, uneven at base, thick velvety beneath, less hairy on upper surface; raceme hoary, one foot long, many flowered; calyx cup-shaped, entire or slightly lobed; standard saddle-shaped, petals of the keel only slightly adhering; stamens ten, not united, the upper distant; pod contracted between the globose seeds, resembling a bead necklace. Distribution, West Indies and many tropical seashores; habitat, seaside rocks. Flowers one inch, bright yellow; October to December.

SECTION II.—*Casalpinieæ*. Flowers not *papilionaceous*, the upper petal folded within the side ones in the bud; stamens ten, distinct.

XI. POINCIANA.

Calyx five partite, coloured, the lowest segment largest and vaulted; petals five, unequal; stamens ten, equal.

1. *P. Regia* (Poinciana). A handsome evergreen tree, twenty to thirty feet high, with wide spreading branches; leaves a foot in length, abruptly twice pinnate, pinnæ twelve to eighteen pairs, four inches long and bearing twelve to eighteen pairs of small entire leaflets; flowers large in axillary racemes; calyx yellow; petals five, with long claws, wavy at the edges, the upper one yellow streaked with crimson, the others all crimson; stamens long, curved upwards; pod twelve to eighteen inches long, two inches wide, oblong, straight, compressed, many-seeded. Native of Madagascar. Habitat, parks, gardens, and sides of streets. Flowers three inches in diameter; September.

A few of these trees may be noticed in Reid Street (West End), where their shade in summer is most refreshing; and both for this purpose and on account of the beauty of their foliage and flowers it is to be hoped that their number will soon be increased.

2. *R. pulcherrima* (Barbadoes flower fence). An evergreen shrub somewhat similar to the above, but whose branches are armed with numerous prickles; has also been introduced and may be seen at Mount Langton and elsewhere; its flowers are orange-red, with very long stamens and style.

XII. CASSIA.

Shrubs with pinnate leaves, leaflets unequal at the base; sepals five, slightly united at the base and early falling off; petals five, unequal; stamens ten, unequal, three upper usually abortive and different in form to other seven, fertile ones opening by two pores at top; pods many-seeded, the seeds usually separated by transverse partitions; flowers yellow.

1. *C. bicapsularis* (Christmas bush). An evergreen shrub, three to four feet high, with long, weak and trailing branches, stems smooth; stipules one-eighth of an inch, narrow, pointed; leaflets smooth, three to four pairs, the lower round half-inch in diameter, with an oval gland between them, the outer pair larger obovate with a minute point; racemes axillary, ten to twelve flowered, as long as the leaves; sepals yellow; lower petal largest; two stamens very long, equalling the style, one inferior solitary, four central ones, fertile but short, and three superior with petal-like anthers; pod nearly cylindrical, four to six inches long, many-seeded, valves leathery. Distribution, West Indies; habitat, hedges, etc., not uncommon. Flowers one inch in diameter; November to March.

Several other shrubby species of *Cassia* have been introduced in gardens, etc., and will easily be recognised by the above characteristics. *C. Baccilaris*, which resembles the foregoing in having a

cylindrical pod, has only two pairs of leaflets with a gland between the lower pair. In *C. ligustrina* (perhaps the most frequently cultivated) the five to eight pairs of leaflets are narrowly lance-shaped and very unequal-sided, the petiole bearing a gland just above its base, the pod compressed and membranaceous. *C. occidentalis* has also a gland at the base of the petiole, five pairs of ovate, lance-shaped leaflets, nearly equal-sided, rough at the edges with minute teeth. In *C. alata* the pod is four-angled, wavy wings traversing the middle of the valves, the petiole triangular and bearing no glands. *C. glauca* has four to six pairs of leaflets, with a gland between the two lower pairs. *C. florida* (Public Grounds) is a tree, the petiole bearing no glands, the pods flat, narrow, leathery, about six inches long.

One or two trees of the American Swamp Locust (*Gleditschia monosperma*), which belongs to this section, may be seen growing near Spanish Point; the branches are armed with formidable spines one and a half to two inches long, the leaves twice pinnate, and pods one-seeded.

SECTION III.—*Mimoseæ*. Calyx and corolla both regular valvate in the bud; leaves usually twice pinnate, more or less sensitive and closing at night; flowers in heads.

XIII. DESMANTHUS.

Heads few-flowered; petals nearly distinct.

1. *D. virgatus*. A slender shrub, four feet high; stems twiggy, smooth; stipules bristle-like; leaves abruptly twice pinnate, pinnæ four pairs, between the lowest pair of which is a gland, leaflets about twelve pairs, smooth, narrow, oblong, entire; heads stalked, few-flowered; calyx five-toothed; petals five; stamens ten, long, distinct; pod two inches long, one-sixth of an inch wide, flat, compressed, ten-seeded. Distribution, West Indies; habitat, hedges, rare (Hungry Bay and Somerset Bridge). Flowers white; July.

Another of the *Mimoseæ* which is a general favourite in our gardens is the Sensitive Plant (*Mimosa pudica*), a small half-shrubby plant six to twelve inches high; the reddish stems are armed with recurved prickles, the long petiole terminates in two pairs of pinnæ, each bearing twelve to twenty pairs of small, narrow, oblong, pointed leaflets; flowers in dense ovoid heads; pods few-seeded, compressed, jointed, separating from the narrow border which is armed with spreading prickles.

When the leaves of this peculiar plant are touched the petiole at once droops downward from the axis, the pinnæ move forward and the leaflets rapidly close upwards as though shrinking from the touch; after a short time they recover their former position.

XIV. LEUCENA.

Heads many-flowered; calyx five-toothed; petals five, distinct.

1. *L. glauca* (Wild Acacia). An evergreen shrub or small tree, branches without prickles, dotted with small powdery scales;

leaves twice pinnate, pinnæ four to eight pairs, with a gland between the lowest pair, leaflets twelve to twenty pairs, one-third to one-half inch long, smooth, narrow, oblong, pointed, very unequal-sided; flowers in dense globular white heads; pods stalked, usually in bunches four to seven inches long and three-quarters of an inch wide, very flat, compressed, pointed, valve, papery, twelve to twenty seeded, seeds flat, polished. Distributions West Indies and other tropical countries; habitat, common in hedges, waysides, etc., throughout the Islands.

The seeds of this plant are frequently used for making necklaces, etc., under the misnomer of Cassia seeds.

To this section also belong the true Acacias, *A. Lebbec* and *A. Arabica*; the latter is frequently to be seen in gardens and shrubberies, and is easily recognised by its globose heads of yellow flowers, spiny branches, and profusion of minute leaflets.

Nat : Ord : 22 Rosaceæ.

Herbs, shrubs, or trees, with alternate, simple, or compound leaves; calyx regular, five-lobed, the tube lined with a disc; Petals five, regular, their edges overlapping, inserted into disc; stamens numerous, inserted with petals; ovaries superior, one or more, free or combined, one-celled, one or two-seeded, sometimes when ripe enclosed within the enlarged calyx-tube; styles arising from side of ovary; fruit very various, and dividing this order into several sub-orders.

In Rosaceæ proper the carpels are several, distinct from each other and from the calyx. Thus in the Strawberry the one-seeded nutlets are seated upon the enlarged succulent receptacle, while in the Blackberry numerous juicy, one-seeded fruits are collected on a conical dry receptacle.

This sub-order is well represented in our Island by the many and beautiful varieties of the Garden Rose, which bloom in profusion all the year round and laden the air with their perfume. In the double roses the petals are multiplied, the stamens and pistils becoming also transformed into petals.

Considerable attention is now being paid to the cultivation of the Strawberry (*Fragaria vesca*). New varieties are being introduced, and some very successful results have been reported. The common Blackberry (*Rubus fruticosus*) has been introduced as an experiment, but does not thrive.

In sub-order Pomeæ the carpels are one to five in number, adhering to each other and becoming enveloped by the fleshy calyx. The fruit is called a pome, and contains one or two seeds in each of its cells.

The trees of this sub-order are natives of more northern climes, and hence cannot be expected to thrive in Bermuda. The Apple (*Pyrus malus*), Pear (*P. communis*), and Quince (*Cydonia vulgaris*) have been introduced, and for a few years grow well; the fruit, however, never attains its full flavour, and the trees decay prematurely, probably for want of the leafless repose of winter. The Loquat (*Eriobotrya Japonica*), as its name implies, is a native of Japan, and thrives well in sheltered situations.

In *Drupaceæ* the fruit is superior, consisting of a one-celled, one-seeded, hard stone, surrounded with a fleshy covering. The fruits represented in this sub-order are the Apricot (*Armenica vulgaris*) and the Almond (*Amygdalus communis*), both of which are, however, rarely cultivated. The Peach (*Amygdalus persica*) and its ally the Nectarine were formerly very plentiful, but their cultivation has been entirely neglected for some years owing to the ravages of an insect pest belonging to a genus of weevil (*Curculio*), which work great havoc to fruit and grain throughout Europe and America.

Attention is now being again directed to the growth of this fruit by Mr. Hart and other gentlemen, and it is to be hoped that by the introduction of new varieties and diligent cultivation that the difficulties will be overcome.

The West Indian Laurel (*Prunus occidentalis*), with evergreen laurel-like leaves, and the American Cherry (*P. Virginiana*), have also been introduced, but the order furnishes no indigenous or naturalized plants in Bermuda.

The white blossoms of the double-flowered Spiræas (*S. Japonica* and *S. prunifolia*) are conspicuous in gardens and shrubberies.

Nat : Ord : 23 *Myrtaceæ*.

Evergreen shrubs or trees, with simple, entire, opposite or alternate leaves, which have veins running around their margins, and are usually dotted with minute transparent cells containing aromatic oil; calyx four to five parted, valvate; petals four to five imbricated, usually white; stamens numerous, inserted into calyx; ovary inferior, compound, four to five celled; style and stigma simple; fruit a fleshy berry, usually with numerous seeds.

Several trees and shrubs of this order are to be met with in cultivation. The Guava (*Psidium pomiferum*) does not appear to thrive well; but the so-called Cherries (*Eugenia ugni* and *E. Brasiliensis*) grow exceedingly well. The fruit is about the size of the Cherry, obtusely five-angled, of a delicate waxy red colour and agreeable taste. The Common Myrtle (*Myrtus communis*) is found in gardens, and the Allspice (*Pimenta vulgaris*) in shrubberies. The Rose Apple (*Jambosa vulgaris*) and the Akee (*Blighia Sapida*) have also been introduced locally.

Several attempts have been made to introduce the Australian Gum trees (*Eucalypti*), but there appears to be a difficulty in raising the young plants from seed. A few vigorous trees are to be found in the Islands, but if planted more generally in the peaty margins of marshes, they would perform the two-fold office of draining the land and rendering those districts more healthy.

I. EUGENIA.

Shrubs with opposite, entire, dotted leaves; fruit a one-celled, one-seeded berry.

1. *E. Monticola*, D.C. An evergreen shrub, four to five feet high, branches erect, woody; leaves leathery, smooth, oval, blunt, two to three inches long, one and a quarter to one and three-quarter

inches wide, black when dry, veins forming a continuous arch distant from the undulated margin; petioles dark red, quarter-inch long; flowers in inconspicuous axillary clusters of eight to ten, the interior ones forming a minute raceme, flower-stalks rather shorter than petiole and bearing a small pointed bract; calyx four-lobed; petals four, minute; berry? Distribution, Bahamas and other West Indian Islands; habitat, north point Boaz Island (elsewhere?) probably indigenous. Flowers white; July.

II. PUNICA.

Leaves without dots; berry many-celled, many-seeded.

1. *P. granatum* (Pomegranate). An erect, branched shrub or small tree; leaves lance-shaped or narrow, oblong, entire, with short petioles; calyx tube enlarged, leathery, persistent, with a five-parted valvate limb; petals five to seven, crumpled; stamens numerous, inserted into calyx-tube; fruit with a dense leathery rind, enclosing several irregular cells and numerous seeds covered with pulp. Distribution, most warm countries; habitat, common in hedges and shrubberies. Flowers large, crimson; June and July.

Nat: Ord: 24 Rhizophoraceæ.

Shrubs or trees with opposite leaves and deciduous stipules; calyx valvate, four to five lobed; petals four to five; stamens twice as many as petals; ovary two to four celled, each containing two or more ovules; style simple; fruit one-seeded, crowned by the persistent calyx.

I. RHIZOPORA.

1. *R. Mangle* (Mangrove.) An evergreen spreading tree, from the branches of which continually descend rod-like, secondary roots, which penetrate into the soil, and form new trunks; leaves quite entire, four inches long, oval or oblong, ovate, blunt, smooth, leathery, shining; stipules large, opposite, embracing the stem, on which they leave ring-like scars; flower-stalks axillary, divided, bearing two to three flowers; calyx four-lobed, leathery; petals four, deciduous, irregularly cut along the margin; stamens eight; seed usually germinating on the tree, and forming a long root before separating from the parent. Distribution, tropical seashores and swamps; habitat, common in Bermuda, forming the mangrove swamps; usually much intermixed with the false mangrove (*Avicennia nitida*), from which it is easily distinguished by its darker foliage. Flowers yellow; August to November.

Nat: Ord: 25 Combretaceæ.

Shrubs or trees with opposite or alternate leaves and no stipules; calyx superior, four to five lobed, valvate, deciduous; petals four to five or none; stamens five to ten, inserted on calyx; ovary inferior, one-celled, with two to four ovules; style and stigma simple; seed solitary.

The Demerara Almond (*Terminalia Catappa*), the seeds of which

are edible, and a West Indian tree, *Bucida buceras*, have been introduced at Mount Langton.

I. CONOCARPUS.

Flowers in dense flower-heads; petals none.

1. *C. procumbens* (Butterwood). A prostrate, contorted shrub, with knotted and densely interwoven branches; leaves alternate, leathery, shortly petioled, obovate, oblong, pointletted, silvery with minute down when young, afterwards smooth, shining, pitted beneath in the vein axils, two inches long; flower-heads globose, arranged in terminal or axillary racemes, their stalks hoary and supported by bracts; calyx minute, the limb five-parted and deciduous; stamens eight, inserted in calyx and twice its length; fruit a cone-like head of brown one-seeded nuts, densely imbricated round a woody axis. Distribution, Florida and West Indies; habitat, seaside rocks, very common, probably indigenous. Flower-heads half-inch in diameter; September to December.

2. *C. erectus* (Buttonwood). A shrub, scarcely distinct as a species from the above, is common in marshes and swamps; in these situations it appears an erect shrub or small tree, with straight branches and lance-shaped leaves; other organs as in *C. procumbens*.

Nat: Ord: 26 Onagraceæ.

Herbs or shrubs with simple, entire or toothed leaves; calyx superior, with a valvate, four-lobed limb; petals four, inserted into throat of calyx; stamens four to eight, inserted into calyx; pollen grains connected by threads; ovary inferior, four-celled; style narrow; stigma capitate or four-lobed; fruit a four-celled, many-seeded capsule.

To this order belong the garden Fuchsias; but although fresh varieties are constantly being imported, they do not appear to take kindly to our climate and soon die off.

I. CENOTHERA.

Calyx-tube longer than ovary, its lobes cohering irregularly together; stamens eight; style long, narrow; stigma four-lobed.

1. *Æ. longiflora* (Evening Primrose). A biennial, erect plant, all parts coated with dense soft hairs; leaves variable, ovate, hastate or narrow oblong, blunt at base, acute pointed, few and irregularly toothed; flowers axillary; calyx-tube three times length of ovary, narrow, three inches long, limb four-parted, reflexed, the divisions cohering in pairs; petals large, two-lobed; stigma with four long arms; capsule one inch long, narrow, four-angled; seeds small. Distribution, South America, introduced West Indies; habitat, not uncommon in waste land as a garden escape. Flowers yellow, three inches in diameter; May to August.

2. *Æ. Sinuata*. An annual, pubescent plant; leaves one inch long, sessile, narrow-oblong, deeply and irregularly toothed, wavy; calyx-tube twice as long as ovary, limb as in preceding species; petals obovate; stigma four-parted; capsule erect, three-quarter

of an inch long, usually curved. Distribution, North America; habitat, fields; Port Royal, &c. Flowers yellow; May to July.

3. *Æ. rosea*. A perennial, smooth, half-shrubby species; stems ascending, twiggy; leaves ovate, lyrate at the base, slightly toothed, one and a half inches long, short petioled; calyx-tube one inch long, not twice as long as ovary, limb half-inch, reflexed, its divisions cohering in pairs; petals broad, obovate; arms of stigma narrow; capsule four-angled, eight-ribbed; seeds numerous, small. Distribution, Mexico, Jamaica, &c.; habitat, common in fields. Flowers rosy, three-quarters of an inch in diameter; March to May.

4. *Æ. humifusa*. A perennial, half-shrubby plant; stems stout, spreading, hairy; leaves oblong, acute, quite entire, silvery, pubescent; flowers axillary, contorted in bud; calyx-tube very slender, three times as long as ovary; stamens eight, thread-like; anthers versatile; stigma with four arms; capsule four-angled, narrow, one inch long. Distribution? habitat, sandy seashores; St. David's and Tucker's Town. Flowers one inch in diameter, orange-yellow; May.

II. ISNARDIA (Ludwigia).

Calyx-tube as long as ovary; stamens four; style short.

1. *I. repens*. A glabrous, perennial, aquatic plant; stems brittle, rooting at the nodes; leaves opposite, one inch long, oval, pointed, tapering at base into petiole; flowers axillary, sub-sessile, with two awl-shaped bracts; calyx-lobes persistent, triangular, acute; petals four, yellow, very small; stamens four, short, inserted on disc; capsule one-quarter inch long, bluntly four-lobed. Distribution, South United States and Jamaica; habitat, marshes, occasionally spreading on reclaimed land. Flowers green and yellow; April to June.

The common and beautiful bush known as the Queen of Shrubs (*Lagerstræmia Indica*) belongs to the closely-allied order of *Lythraceæ*.

Nat: Ord: 27 *Crassulaceæ*.

Succulent herbs with opposite or alternate leaves, without stipules; flowers in cymes; sepals four to five, free, or united petals four to five, free, or united into a four to five lobed corolla; stamens inserted with the petals equal in number to them or twice as many; ovaries four to five, distinct or connected at base, one-celled, tapering into the stigmas and furnished with hypogynous scales at the base; fruit of four to five one-celled, many-seeded follicles.

The Stone Crop (*Sedum acre*), Houseleeks (*Sempervivum tectorum* and *S. calyciforme*), and the ornamental *Echeveria Sanguinea* and *E. metallica*, have been introduced into a few gardens, but are not common.

I. BRYOPHYLLUM.

1. *B. calycinum* (Life-plant). An erect, succulent plant, two feet high; stems sparingly branched, sub-angular, spotted purple and green; petioles stem-clasping; leaves opposite, fleshy, simple or

ternate, oval or ovate, crenate or bluntly serrate on margin; flowers pendulous on slender stalks, in terminal panicles; calyx tubular, inflated, four-toothed; corolla four-toothed, constricted above ovaries, then bell-shaped protruding from calyx; stamens eight, adhering to the corolla; ovaries four, ovules numerous. A native of Asia, now generally found as a weed in warm countries, probably introduced as a curiosity. The leaves or leaflets, when placed upon moist earth, produce rootlets and young plants at the crenatures: sometimes a leaf may be picked up with a dozen young plants thus formed around it; this peculiarity appears to have rendered the usual method of propagation unnecessary, as I have never seen the seed at maturity, either here or elsewhere. Common as a weed throughout Bermuda. Flowers one and a half inches long, green and purple; January to May.

Very similar in habit to the above, and also possessing viviparous leaves, is another plant of this order—*Verea crenata*—common in gardens only; its leaves are simple, fleshy, doubly crenate; flowers erect, in dense cymes, yellow, half-inch in length; March.

The Natural Order *Saxifragaceæ* is very nearly allied to the foregoing, and is chiefly distinguished by the absence of hypogynous scales. It only contributes, in these Islands, a few insignificant garden plants—*Saxifraga sarmentosa*, *Hydrangias*, and a shrub, *Deutzia scabra*.

Nat: Ord: 28 *Portulacaceæ*.

Herbs with succulent, entire leaves, and usually prostrate, diffuse stems; calyx two to five partite; petals four to five, imbricate in bud, or none; stamens five to twelve, inserted into base of calyx; ovary superior, one-celled; styles three to five partite; fruit one to three celled, opening transversely, many-seeded.

I. PORTULACA.

Calyx two-partite; petals four to six; capsule one-celled.

1. *L. oleracea* (Purslane). An annual, prostrate plant; stems spreading, brittle; leaves fleshy, nearly opposite, obovate or spoon-shaped, broadly rounded at top and tapering at base into jointed petiole, pellucid, with watery dots, obscurely ciliate on margins; flowers sessile, solitary, axillary or clustered, terminal; calyx-tube persistent, limb two-partite, keeled deciduous; petals five, emarginate; stamens six to twelve; styles five-partite; capsule globular, one-celled, cut across, the lid-like tops falling off at maturity; seeds numerous. Distribution general in temperate and tropical countries; habitat, a weed everywhere; sometimes eaten as a salad. Flowers yellow; nearly all the year round.

Portulaca pilosa, a closely-allied species, will frequently be seen in gardens; its habit is very similar, the leaves about an inch in length, almost cylindrical and pointed, the axils, and around the flower-clusters, woolly, and the flowers pink.

II. SESUVIUM.

Calyx five-partite; petals none; capsule three to five celled.

1. *S. Portulacastrum*. L. (Seaside Purslane). A prostrate, perennial plant; stems brittle, branched and rooting at nodes, forming patches several feet in diameter; leaves succulent, narrow-oblong, blunt pointed, tapering into the sheathing base, sometimes flat but frequently distended, sub-cylindrical; flowers sessile; calyx five-partite, persistent, limb horned, with a pink petal-like lining; stamens numerous, arising from tube of calyx; styles three, deciduous; capsule three-celled, many-seeded. Distribution, Florida and West Indies; habitat, sandy bays, &c., frequent. Flowers half-inch; January to May.

The following doubtful members of this order are also to be found in gardens: *Tetragonia expansa* (New Zealand Spinach), now becoming a favourite substitute for spinach in hot countries, on account of its rapid growth and great succulency even in the hottest and driest weather. (I have found it growing wild in the most barren parts of the Island of Ascension, apparently sustained only by nightly dew.) The stems are trailing, winged; leaves broadly ovate, long, pointed, with chrystalline glands spread over surface; flowers axillary, destitute of petals; fruit a four-angled, horned, bony nut. This plant is also to be met with occasionally as an escape from cultivation.

Mesembryanthemum Chrystallinum and *M. cordifolium* (Ice plants), the former with white, and the latter with pink flowers, are also common: they are remarkable for the frosted appearance imparted to their leaves and stems by the ice-like glands scattered over them.

Nat: Ord: 29 Papayacæ.

Trees, with simple erect stems, and milky juice; leaves alternate; flowers in corymbs, usually unisexual; calyx minute, five-toothed; petals five, distinct or united; stamens ten, inserted into corolla; ovary superior, one-celled, many seeded. Fruit fleshy.

I. CARICA.

1. *C. Papaya* (Papaw). A straight unbranched tree, ten to twenty-five feet high. Stem naked, to near the summit, marked with scars of the fallen petioles; leaves one to one and a half feet diameter, on long stalks, palmately five to seven lobed. Female tree with solitary, sessile, axillary flowers; petals five to six, distinct, imbricated; styles five, leafy. Fruit round, yellow, size of orange. Male tree with long-stalked many flowered, axillary panicles; corolla tube, long, narrow; stamens ten, five-longer alternate with five-shorter, inserted in mouth of corolla-tube. Occasionally hermaphrodite and bearing a fruit which is more pear-shaped than in female tree. Distribution introduced into all hot Countries, and general throughout Bermuda, in a state of semi-cultivation. The ripe fruit is eaten as a dessert, and when unripe is valued in cooking for its property of softening animal fibre, and assisting digestion. Flowers and fruits, March to November. The rapid growth of this tree is surprising and but little exaggerated by *Waller*, who says:

"There a small grain in some few months will be
 A firm, a lofty, and a spacious tree.
 The palma-christi, and the fair papaw,
 Now but a seed (preventing nature's law)
 In half the circle of the hasty year
 Project a shade, and lovely fruits do wear."

Nat : Ord : 30 *Passifloraceæ*.

Climbing vines with axillary tendrils and leafy stipules; calyx five-parted, with a fringe of slender rays arising from its throat and forming a crown; petals inserted into calyx-tube or none; stamens four to five, their filaments united together; ovary superior stalked, one-celled; styles three to four spreading. Fruit a many-seeded berry.

Two species of passion flower are favorites in gardens, *Passiflora cœrulea* and *P. laurifolia*, the former for the beauty of its transient flowers, and the latter for its fruit (the water lemon).

I. PASSIFLORA.

1. *P. Minima* (Wild Passion Flower). Root perennial? Stem wiry, its bark becoming corky; leaves from one to two inches, glossy, ovate, entire or three-lobed, lobes oblong; petiole with two small stalked glands above the middle. Flowers axillary in pairs; calyx five-partite, angular at base; Petals none; fringe purple and yellow; stamens five, cohering round stalk of ovary then spreading; styles, three, club-shaped, spreading; berry obovate, quarter to one-half inch long, purple, insipid. Distribution, West Indies; habitat, roadside walls and banks, Salt Kettle to lighthouse, common. Flowers greenish yellow, half-inch diameter; March to September.

Nat : Ord : 31 *Cucurbitaceæ*.

Succulent vines, prostrate or climbing by means of tendrils and usually with the sexes in different flowers. Stems and leaves covered with rough hairs; calyx adhering to the ovary, five-toothed; corolla five-parted, inserted on calyx; stamens (in the male) five, sometimes cohering into three parcels; ovary (in the female) inferior, three-celled; style short; stigmas distinct, thick, velvety; fruit fleshy. Succulent, seeds many, large, flat.

Although this order contributes no indigenous or wild plants to our list, it is a very important one, containing as it does our most popular summer fruits and vegetables. The musk melon (*Cucumis melo*) and the water melon (*Citrullus vulgaris*) in many varieties are largely cultivated in hot months when their cooling properties render them very grateful and acceptable. The pumpkin (*Cucumis pepo*) and its varieties, the marrow and squash are at the same season allowed to run over the cultivated ground; while in Spring the cucumber (*Cucumis sativus*) thrives well. It should, however, not be forgotten that all the above require either the agency of insects or artificial fertilization, and the larger introduction of bees could hardly fail to be beneficial in setting the fruit and making the vines more productive.

Nat : Ord : 32 *Cactaceæ*.

Usually leafless plants, with peculiar jointed, fleshy, angular or thickened stems, on which the leaves have been transformed into bundles of spines; flowers solitary, arising direct from the stem; calyx and corolla usually indistinguishable, consisting of several series of fleshy, imbricated segments, which adhere to the one-celled ovary; stamens very numerous, united at base with the calyx and corolla; styles united; fruit a many-seeded berry.

The peculiar appearance of the plants of this order is usually sufficient to distinguish them from others, and several species are thus cultivated as curiosities. First of these is the Turk's Cap (*Melo cactus communis*), which may frequently be seen adorning the top of stone gateways and in other similar dry situations; the stem is globose, about a foot high, with twelve to twenty vertical, spiny ridges, the top is woolly and half conceals a number of small crimson flowers. Very different in appearance is the night-flowering *Cereus* (*C. grandiflorus*), whose long rope-like stems ascend trees, walls, &c., and after sunset unfolds perhaps the most magnificent flower in the whole Vegetable Kingdom, eight inches in diameter, waxlike and fragrant, but unfortunately closing before daybreak. *C. triangularis*, with triangular stems, is otherwise similar in habit. *Cactus coccinellifera*, on which the cochineal insect lives and feeds; *Peirexia Bleo*, a shrub with natural, oval leaves, and rose-coloured flowers; also the Barbadoes Gooseberry (*P. aculeata*), with climbing spiny stems and leafy, edible berries, are not uncommon in gardens.

I. OPUNTIA.

1. *O. Vulgaris* (Prickly Pear). A prostrate, spreading, or creeping shrub, with jointed branches; joints fleshy, ovate, compressed, bearing dense tufts of slender, barbed bristles, and (in exposed situations) three to six long awl-shaped spines, the latter one to two inches long, yellow; flowers sessile on edge of joints; sepals ovate, pointed; petals leathery; stamens very numerous; fruit crimson, obovate, two inches diameter, edible. Distribution, Southern Europe and America; habitat, sandy shores, very common. Flowers yellow; July to September.

The Gooseberry (*Ribes grossularia*) and Red Currant (*R. rubra*), which belong to the nearly allied order *Grossulacæ*, have been introduced locally, but with indifferent success, owing to a disposition to form too much wood.

Nat : Ord : 33 *Umbelliferae*.

Herbaceous plants, usually with erect, hollow stems, and alternate compound leaves, the petioles sheathing around the stem; flowers small, in simple or compound umbels, usually supported by leafy bracts; calyx-tube surrounding the ovary, the limb small or none; petals five, minute, white or yellow, inserted alternately with the five stamens beneath a disk, which surmounts the two-celled ovary; ovules one in each cell; styles two, distinct; fruit separating when ripe into twin, seed-like divisions, which remain hanging from the split, hair-like, prolongation of the axis, each division (carpel) con-

tains one seed, and is traversed by five conspicuous ridges and four lesser ones alternating with them, beneath the channels which separate these ridges narrow cells stored with aromatic oil are usually found, as in the Caraway, Aniseed, &c.

The Celery (*Apium graveolens*), Parsley (*Petroselinum Sativum*), Carrot (*Daucus carota*), and Sweet Fennel (*Feniculum dulce*), which belong to this order, are cultivated with success in Bermuda; the carrot in particular, from its rapid growth, appears to be less fibrous and also sweeter than when produced in colder climates.

A. Leaves simple; umbels simple.

I. HYDROCOTYLE.

Small, creeping, half aquatic plants, with round or heart-shaped leaves, which hide the inconspicuous flowers. Fruit much compressed at right angles to its division.

1. *H. umbellata* (Pennywort). Stem creeping and rooting in soft, marshy ground, producing clusters of roundish leaves one to two inches diameter, the petiole attached to the centre (peltate) and the margin indented with ten crenated lobes; petiole four to six inches, slender; umbels on long stalks, many-flowered; fruit emarginate at base and apex. Distribution, North America and West Indies; habitat, marshes, common. Flowers greenish-white; May to August.

2. *H. rependa*, L. Stem creeping and rooting, producing clusters of heart-shaped leaves, very blunt at point, one to two inches diameter, with dentate, wavy margins; petioles two to four inches long, sparingly hairy; flower-stalks short, bearing three to four flowers; fruit broader than long, veined. Distribution, Southern United States; habitat, a constant weed in all marshes. Flowers greenish-white; May to August.

B. Leaves compound; umbels simple.

II. CAUCALIS (Torilis).

Fruit covered with rough bristles.

1. *C. nodosa* (Burr Parsley). An annual herb, all parts rough with short granulated hairs; stem six to eighteen inches, erect or prostrate, branched, slightly furrowed; leaves dense, twice pinnate (somewhat resembling those of the carrot); leaflets acutely pinnatifid; umbels much contracted, opposite to the leaves, on short stalks; flowers in dense sub-globose heads; petals very small, the point turned in; style short; fruit ovoid, one carpel covered with hooked and barked spines, the other tubercled. Distribution, Southern Europe; habitat, waste places, very frequent. Flowers white or tinged with pink; February to May.

c. Leaves compound; umbels compound; fruit laterally compressed at right angles to the division.

III. SMYRNIUM.

Fruit large, compressed laterally; carpels with three prominent ribs; flowers yellow.

1. *S. olusatrum* (Alexanders). A stout, erect herb, root perennial;

stem shining, two to three feet high, angular and furrowed; petioles large, hairy on the margin of the inflated base; leaves three-foliate; segments broadly ovate, lobed and toothed; umbels compound, few-rayed, bracts none and bracteoles inconspicuous; petals ovate, the point turned in; fruit one-third of an inch, roundish, black when ripe. Distribution, Southern Europe, &c.; habitat, waysides and waste places. Flowers yellow; February to May.

This plant is also cultivated in gardens, and is much esteemed by the natives for its virtues, which are said to reside in the root; this is macerated in rum, and used both internally and externally for rheumatism, &c. It was formerly cultivated in England, as celery is now, and differs from it but slightly.

IV. APIUM.

Fruit small, compressed laterally, with five narrow ridges; flowers white; petals entire, point inflexed.

1. *A. graveolens* (Wild Celery). Root biennial; stem smooth, erect, furrowed, about one foot high; leaves three-foliate, leaflets wedge-shaped, cut and toothed at the point only; petioles smooth; umbels compound, axillary, on short stalks, bracts and bracteoles none; petals minute, incurved; fruit round, one-sixteenth of an inch, ridges narrow, equal. Distribution, Europe and America; habitat, moist places, not uncommon. Flowers greenish-white; February to May. *Poisonous in the wild state.*

V. PETROSELINUM.

Fruit as in Apium; petals notched and inflexed.

1. *P. sativum* (Wild Parsley). A biennial, smooth plant; stem erect, branched, angular; leaves thrice-pinnate, lower leaflets crowded, broadly ovate, three-cleft, the segments toothed, wedge-shaped at the base, the upper few lance-shaped; umbels compound, rays numerous, bracts few, simple or divided, bracteoles many, simple. Distribution, Southern Europe; habitat, waste places, not uncommon. Flowers small, white; May to September.

VI. HELOSCIADIUM.

Fruit as in Apium; petals not inflexed.

1. *H. leptophyllum*, D.C. An annual, erect herb, stem twelve to eighteen inches round, polished, obscurely striated and distantly branched; leaves few, distant, ternately divided into many slender bifid or trifid segments; umbels opposite to the leaves, sessile; bracts and bracteoles none, primary rays two to four, about half an inch long, secondary rays many, one-sixteenth of an inch; petals minute, ovate. Distribution, Jamaica and Southern United States; habitat, a common weed in cultivated ground. Flowers white, tinged with pink; February to April.

D. *Leaves compound; umbels compound; fruit not laterally compressed.*

VII. FENICULUM.

Leaves cut into fine segments; fruit oblong, broad at the division.

1. *F. vulgare* (Wild Fennel). A stout, erect herb, root perennial;

stem three to four feet high, round at base, striate, polished; leaves tri-pinnately divided into many fine capillary segments, ultimate divisions short, almost whorled, bifid or trifid; petioles round, furrowed; umbels large, terminal, many-rayed, bracts and bracteoles none; fruit one-eighth of an inch long; carpels with five equal prominent ridges. Distribution, England, &c.; habitat, roadsides, common, very fetid. Flowers yellow; May to September.

The Common Ivy (*Hedera helix*), which is closely allied to the foregoing order, is occasionally met with, creeping over old walls, trees, &c. It differs chiefly from *Umbelliferae* in having a five-celled ovary. Cedar Avenue, Pembroke Church and other places.

DIVISION II.—MONOPETALÆ.

Flowers with both calyx and corolla, the latter consisting of united petals, to the sides of which the stamens are attached.

Nat : Ord : 34 *Caprifoliaceæ*.

Shrubs or small trees, leaves opposite, simple or pinnate, without stipules; flowers usually in cymes; calyx superior, with a small five-cleft limb; corolla four to five lobed; stamens inserted on corolla, four to five or twice that number; ovary one to three-celled; fruit a fleshy berry or drupe, one or many seeded.

All the representatives of this order in Bermuda are introduced and cultivated shrubs. The Laurestine (*Viburnum Tinus*), a compact little evergreen, with clusters of white flowers, may be seen adorning shrubberies; and less frequently the Snowberry (*Chiococca racemosa*), with its clusters of snow-white berries.

The Elder (*Sambucus nigra*) is not uncommon, but does not usually produce fruit, although I have seen it do so occasionally.

Two species of Honeysuckle, *Caprifolium sempervirens* and *Lonicera Japonica*, are trained along verandahs, for which their evergreen leaves and the exquisite sweetness of their flowers render them very suitable. In the former species the upper pairs of leaves are united at the base, so that the stem appears to grow through them; in the latter the leaves are all distinct.

Nat : Ord : 35 *Rubiaceæ*.

Herbs, shrubs or trees with entire, whorled leaves or opposite pairs of leaves with intervening stipules; calyx superior, four to six toothed; corolla four to six lobed, bearing an equal number of stamens, alternate with its lobes; ovary inferior, usually two-celled; style simple or bifid; fruit usually two-celled, two or many seeded.

This large and useful order is but poorly represented in these Islands, the wild plants being only worthless weeds of little beauty, and the cultivated ones being confined to a few ornamental shrubs, with the solitary exception of the Coffee tree (*Coffea Arabica*), which has been planted around Walsingham and other caves where it appears to thrive well, but is grown only as a curiosity. The Coffee is a medium-sized tree, with oblong, shining leaves, and axillary clusters of white flowers of characteristic odour.

The Cape Jasmine (*Gardenia florida*), with its variety *Fortuni* and a few other white-flowered *Gardenias*, are cultivated. Some four or five species of another genus (*Ixora*), bearing handsome orange or scarlet flowers, have also been locally introduced, but have not found much favour. One representative of the large West Indian genus of *Psychotria* (*P. Pavetta*) is said to grow at Bishop's Lodge, and the *Voa Vanguiera* (*V. edulis*) at Mount Langton. A rather pretty plant (*Pentas carnea*), with globose heads of flesh-coloured flowers, may be seen in flower all summer in Public Park and other places.

I. RACHICALLIS.

Small-leaved shrubs; flowers solitary, axillary; capsule two-celled, many-seeded.

1. *R. rupestris*. A low, spiny shrub, two to three feet high, branches rusty, erect, in opposite pairs; spines axillary, slender, longer than the leaves; leaves one-third of an inch diameter, roundish, pointed; stipules triangular, long-pointed, embracing the stem and petioles; flowers sessile; calyx with five narrow lobes and teeth alternate with them; corolla very hairy; lobes four, imbricate; stamens four, hidden in tube of corolla; capsule one-third of an inch, globose, about eight-seeded. Distribution, Bahamas; habitat, barren hills South Shores, probably indigenous. Flowers yellow; September.

II. SPERMACOCE (Boottia).

Annual weeds with opposite leaves and dense axillary clusters of minute flowers; calyx persistent, hairy, with four minute teeth; corolla four-lobed, valvate, lined with soft, beaded hairs; seeds two.

1. *S. tenuor*. Lamarck. Stem slender, erect, sparingly branched, four-angular; leaves lanceolate, pointed, entire, hairy, the upper narrow; stipular sheath connecting the petioles and fringed with long, slender pink bristles; clusters many-flowered; stamens four; style equalling the stamens; stigma capitate; fruit dry, bristly, separating into two one-seeded carpels, crowned with two horns; seeds furrowed on face, rough, netted on the back. Distribution, West Indies; habitat, a very common wayside weed. Flowers pale pink; nearly all seasons.

2. *S. levis*. Grisebach. Stem erect, smooth, sub-cylindrical or slightly angular; leaves ovate, lanceolate, pointed, shining and deeply channelled above; sheath compressed, joining the petioles and fringed with slender bristles; clusters many-flowered; flowers and fruit as in the preceding species, but seeds striated with continuous transverse furrows. Distribution, West Indies; habitat, &c., as in *S. tenuor*.

III. GALIUM.

Herbs with square stems and whorled leaves; flowers minute, axillary; calyx limb obsolete; fruit two-seeded.

1. *G. hypocarpium*. An annual, diffuse, hispid weed; stem half to one foot, with four prominent ridges; leaves one-third of an inch long, four in a whorl, oblong, pointed; flowers on slender-jointed

stalks, supported by a whorl of four leafy bracts; corolla wheel-shaped, four-lobed; stamens four; styles two; stigmas globose; berry black, divided into twin one-seeded divisions. Distribution, West Indies; habitat, a weed frequent by waysides and on barren hills. Flowers yellow; June to August.

Some time since I collected another species of *Galium*, probably *G. palustre*, in Pembroke Marshes, but it was not in flower and I have not met with it since.

IV. SHERARDIA.

Herbs resembling Galium, but calyx four-toothed; corolla funnel-shaped, with a slender tube.

1. *S. arvensis* (Field Madder). An annual, prostrate, hispid plant; stems a foot in length; leaves half-inch long, four to six in a whorl, oblong-lanceolate, pointed; corolla-tube slender; limb four-lobed; stamens four; fruit minute, dry, crowned with the calyx-teeth and separating into twin seed-like divisions. Distribution, Britain; habitat, waysides, Saltkettle. Flowers pink; May.

Nat: Ord: 36 Valerianaceæ.

A small order of herbaceous plants with opposite leaves, no stipules and small irregular flowers; calyx superior; corolla funnel-shaped, frequently with a spur at the base; lobes three to five imbricate; stamens one to three, arising from base of corolla; ovary inferior, three-celled, two empty, one containing solitary ovule; fruit small, indehiscent.

Centranthus ruber (called Sugar Plums in Bermuda) is common in flower gardens; it is a smooth, erect plant, two feet high, with fleshy, sub-entire leaves, two to three inches long, and dense, terminal cymes of red flowers, the corolla has a slender spur at the base, a solitary stamen, slender style and capitate stigma.

Among some dried plants collected by Governor Lefroy I find two specimens of Lamb's lettuce (*Valerianella olitoria*), marked St. David's. Unfortunately I have been unable to find it growing on my hasty trips to that Island. It is a small annual, with forked branches, in the axils of which the dense cymes of small lilac flowers are collected; the leaves are one to two inches long, nearly entire, and are said to be excellent as a salad.

Nat: Ord: 37 Compositæ.

Herbs or shrubs with opposite or alternate leaves, usually simple, sometimes divided, without stipules; flowers, called florets, crowded in dense heads upon a flattened receptacle and surrounded with a calyx-like involucre consisting of many bracts; calyx superior, adhering to the ovary, the limb absent or consisting of hairs or feathers and called a pappus; corolla superior, either tubular or split open and strap-shaped (ligulate); stamens five, anthers cohering into a tube, sometimes tailed at base; ovary one-celled, one-seeded; style simple; stigmas two; fruit small, seed-like, crowned with the pappus—the latter is usually light and feathery,

and by acting as a parachute transports the seeds to a distance; or it may be rough and barbed, as in *Bidens*, when by adhering to passing animals, &c., it effects the same purpose.

This is the largest order of flowering plants, containing 8,000 or 9,000 species: they are easily recognized by the arrangement of the flowers in heads and united anthers. As a rule the *Compositæ* are not handsome, neither do they furnish many useful products; varieties of the Lettuce (*Lactuca sativa*) are grown through all the cooler months, while the Artichoke (*Cynara Scolymus*), a conspicuous plant with large, deeply pinnatifid, silvery leaves, is occasionally cultivated; the part eaten is the fleshy receptacle at the base of the purple florets.

Around most country cottages will be noticed the feather-like leaf of the Tansy (*Tanacetum vulgare*), much prized by the natives as a tonic and stomachic; and less frequently the Feverfew (*Pyrethrum parthenium*).

The *Compositæ* are not regarded with much favour in the flower gardens, those most frequently cultivated being purple and white varieties of *Chrysanthemum* (*C. Sinense*), star-like *Asters* and many-coloured *Zinnias*, while *Gazanias*, Ox-eye Daisies and French Marigolds receive also a share of attention.

SECTION I.—Heads consisting entirely of tubular florets; or only the outer series, or ray, ligulate.

A. *Eupatoriaceæ*. Heads discoid, florets all tubular; branches of style elongate, bluntly club-shaped, minutely pubescent; anthers not tailed.

I. EUPATORIUM.

Heads few-flowered; bracts imbricate; fruit five-angled.

1. *E. fœniculaceum* (Dog Fennel). A tall, annual plant, with fennel-like leaves; stem four to six feet high, smooth, much branched; leaves alternate pinnately divided into innumerable slender segments, upper fascicled. Heads very numerous, small, four to five flowered, in a compound pyramidal panicle; bracts in two series, three outer minute, five inner large, oblong with a sharp point; pappus a single series of slender hairs; style arms long. Distribution, Southern United States; habitat, moist places near marshes, &c. Heads dirty white, one-tenth of an inch diameter; August and September.

B. *Asteroidæ*. Heads usually radiate; bracts equal or imbricate, finally reflexed, exposing the flat, naked receptacle; florets of disk tubular, perfect; ray florets ligulate, female or neuter; style arms flat, narrow, pubescent at the conical tip only; leaves alternate.

II. ASTER.

Heads many-flowered; disk florets yellow; ray florets usually few, in one row, purple or white; bracts imbricated; receptacle flat, honey-combed; pappus simple, rough,

1. *Aster* (Species?). A smooth, perennial plant, half shrubby at the spreading base; leaves three to four inches long, three-quarters of an inch broad, somewhat rosulate, shining green, oblanceolate, acute, tapering at the base into a short-winged petiole, lower sparingly but sharply toothed, upper lanceolate, sessile, entire; heads cylindrical, numerous in rather naked corymbs; bracts closely imbricate, three to four seriate, linear, with membranaceous margins; rays short, pure white, fifty to sixty, in two rows, but slightly exceeding the bracts; style arms (in perfect florets) shortly lanceolate; pappus simple, white.

The above does not appear to correspond with any of the North American *Asters*; it is common on rocky banks and by waysides throughout the Islands, except Somerset and Ireland. I find the same plant among some dried specimens left here by Governor Lefroy, marked "*Aster* or *Erigeron* new?"—it appears to be a true *Aster*. Heads quarter-inch in diameter; April to August.

III. ERIGERON.

Heads many-flowered; disk florets yellow, tubular; rays very numerous, white or purple. Bracts equal, narrow, nearly in one row; receptacle flat, smooth or dotted; pappus a single series of rough bristles or with a second shorter series. Flowers of no beauty with exception of No. 5.

1. *E. Canadense* (Fleabane). An annual, erect plant; stem wiry, one to three feet high, much branched above, rough, hairy and furrowed; leaves two to three inches long, quarter-inch wide, narrow lanceolate, the lower slightly serrate, upper very narrow, entire, rough ciliate on margins. Heads small paniculate; bracts narrow, blunt, longer than the many-crowded, insignificant florets; pappus simple, straw-coloured. Distribution, North America; habitat, a troublesome weed very common in cultivated ground and waysides. Heads white, one-sixth of an inch; June to August.

2. *E. Pusillum* is a dwarf state of the above variable plant, when growing on barren rocky ground; stem then frequently only six inches high, and all parts reduced in proportion.

3. *E. bonariensis*. An annual, erect, leafy plant, all parts clothed with long, soft hairs; stem striate, one to three feet high, branched above; leaves lanceolate, one-third to half-inch wide, the lower irregularly toothed or sinuate pinnatifid, the upper entire. Heads small in an irregular panicle; bracts slender, pointed, tipped with purple, longer than the many slender florets; pappus simple, tawny. Distribution, South America and West Indies; habitat, common, waysides and cultivated ground. Heads white, one-third of an inch; May to August.

4. *E. annuum*. Annual, stem erect, stout, three to four feet high, very leafy from the base, at length branched, striate, hairy; leaves four to six inches long, one to one and a half inches wide, shining, sparingly hairy, coarsely and sharply toothed in the middle, ovate or ovate lanceolate, tapering into a slender-winged petiole; uppermost sub-entire ciliate. Heads in a large, scattered panicle; bracts half the length of the many narrow florets; pappus double. Dis-

tribution, North America; habitat, fields and waysides, common. Heads half-inch diameter, white, tinged with purple; April to July.

5. *E. Jamaicensis*? An annual, softly pubescent plant; stem simple, slender, erect, six to eighteen inches high, nodding before flowers expand; root leaves rosulate, obovate, blunt, lyrate pinnatifid or sinuate toothed, tapering into the narrowly-winged petiole; stem leaves few, distant, obovate, spatulate, sharply few serrate, clasping the stem, uppermost small, entire. Heads few, in terminal corymb; rays two seriate, innumerable, thread-like, twice as long as bracts; pappus simple. Distribution, Jamaica, &c.; habitat, a pretty wayside plant, not uncommon. Heads half-inch diameter, rays purple, disk yellow; April and May. The above is undoubtedly an *Erigeron*, but I am a little uncertain about the species.

IV. SOLIDAGO.

Perennial herbs, with erect stems. Heads small, yellow, few-flowered, in terminal or axillary racemes; ray florets few, distant, female. Bracts numerous, oppressed, imbricated; receptacle narrow, honeycombed; pappus a single row of rough, slender bristles.

1. *S. sempervirens*. Linn. (Golden rod). Stem erect, smooth, purplish, two to four feet high; leaves lanceolate, acute at both ends, one to two inches wide, six to ten inches long, smooth, entire, rather fleshy; the root leaves on long, slender petioles, the upper sessile, half embracing the stem; panicles one-sided, long, compact, nodding; pedicels pubescent; ray florets eight to ten. Distribution, North America; habitat, a very common plant by waysides and along the shores, unmistakable from its long, compact panicle of golden yellow flowers. June to October.

V. PLUCHEA.

Strong-scented herbs or shrubs, with purple flowers; heads discoid in many-flowered corymbs; the outer florets numerous, slender, female, perfect florets central, with a dilated five-cleft corolla and long entire style; involucre imbricated; receptacle flat, naked.

1. *P. camphorata* (March Fleabane). An annual, fleshy plant, with stout, erect stem, one to one and a half feet high, branched above, all parts clothed with short, viscid hairs; leaves two to three inches long, ovate-lanceolate, acute, scarcely stalked, the lower sharply toothed, upper entire; corymbs crowded; pappus simple, red. Distribution, United States; habitat, marshes. Heads purple; May to August.

2. *P. odorata*. A shrub four to six feet high, much branched from the base, branchlets clothed with rusty, woolly down; leaves oblong, pointed, entire, woolly beneath, margin wavy, tapering into the short petiole; corymbs much branched, heads numerous; outer bracts broadly ovate, blunt, inner narrow, oblong, pointed. Distribution, West Indies; habitat, waysides, thickets, &c., not common. Heads pink, one-third inch in diameter; February to May.

VI. RACCHARIS.

Shrubby plants, often resinous or viscid. Heads discoid, many-flowered; male and female florets on separate plants; involucre oblong, imbricate, with leathery scales, receptacle naked.

1. *B. heterophylla* ? (Dogbush). An erect, bushy shrub, three to six feet high, with smooth, angular branches; leaves leathery, two to three inches long, obovate or oblanceolate entire, or with one or few pairs of angular teeth above the middle, and an entire, wedge-shaped base, smooth and shining above, dotted beneath with minute scales. Heads in terminal panicles; pappus simple, slender, whitish. Habitat, marshes, very common. Heads brownish-white, one-third inch; October to March.

c. *Senecionidæ*. Herbs or shrubs with opposite or alternate leaves. Heads usually radiate, style arms linear, truncate at apex or bearing a hispid appendage.

VII. BORRICHIA.

Seaside shrubs, with opposite, leathery leaves; heads solitary, radiate; rays female, fertile; involucre imbricate, the outer row leafy; receptacle flat, with persistent, woody scales.

1. *B. arborescens* (Seaside Marigold). An erect, brittle, succulent shrub, three to four feet high; leaves three to four inches, lanceolate, fleshy, quite entire, sharp-pointed, tapering and embracing the stem with their united base, either smooth and shining or white with silvery down (the two forms sometimes occurring on the same plant); rays about fifteen, achenia four-angular, with a four-toothed crown. Distribution, Bahamas and Turks Islands; habitat, barren seaside rocks, common. Heads bright yellow, one and a half inches in diameter; May to September.

VIII. WEDELIA.

Herbs or shrubs, with opposite leaves; heads radiate in cymes, rays female, fertile; disk florets barren; involucre two-seriate, scales leafy.

1. *W. perfoliata*. A coarse, erect, annual plant, with angular stems; petioles meeting at the base; leaves large, rhomboid, coarsely lobed and toothed; cymes terminal; outer bracts five to eight, broad, leafy and spreading, inner twice as many, embracing the fertile florets; achenia ovate, smooth. Distribution, Mexico; habitat, plantations, &c., rather rare. Heads one and a half inches in diameter, yellow; April to July.

IX. PARTHENIUM.

Annual herbs, with alternate leaves; ray-florets five to six in number, female and fertile, somewhat strap-shaped; disk florets tubular, numerous, barren; involucre two-seriate.

1. *P. hysterophorus*. An annual, erect herb, one to two feet high; stem somewhat hoary, grooved; lower leaves twice pinnatifid,

lobes very irregular, acute, sub-entire; uppermost linear entire; heads numerous, in spreading panicles; outer bracts five, ovate, covering the inner orbicular ones and supporting the five distant fertile florets; achenia five, compressed. Distribution, West Indies; habitat, waysides and waste places, common. Heads quarter-inch, white; summer months.

X. AMBROSIA.

Annual weeds, with pinnatifid leaves and inconspicuous flowers. Barren heads, many-flowered in slender racemes; fertile flowers solitary at base of racemes or in axils of upper leaves; involucre entire or five-toothed, one-flowered.

1. *A. artemisiifolia* (Hogweed). Stem stout, erect, one to three feet high, branched, pubescent; petioles fringed with slender hairs; leaves twice pinnatifid, segments acute, few-toothed; racemes slender, terminal, the heads barren and surrounded by united scales; fertile involucre armed with five to six teeth, one-flowered; corolla and stamens none. Distribution, North America and West Indies; habitat, waysides and cultivated ground. Heads very small, greenish with yellow stamens; May to September.

XI. BIDENS.

Annual plants, with opposite leaves; heads radiate, rays barren; involucre two-seriate; achenium four-angled, crowned by two persistent, barbed awns.

1. *B. leucanthus* (Shepherd's needle). An erect, annual herb; stems branching, four-angular, nearly smooth; leaves pinnate (rarely simple), consisting of three to five ovate, coarsely-serrated leaflets; heads in corymbs; outer scales of involucre leafy, spreading, inner membranous, appressed; ray florets five to eight, large white entire or three-lobed; disk yellow; achenia slender, half-inch long, with two to four arms. Distribution, tropical countries; habitat, a very common weed, and troublesome from the barbed awns sticking to the clothes of the passer-by. Heads three-quarters an inch in diameter; summer months.

XII. GNAPHALIUM.

Herbaceous plants, usually clothed with woolly hairs; heads small, bracts half transparent, florets all tubular, outer awl-shaped, female, central florets five-toothed, perfect; pappus hairs in one series, rough.

1. *G. luteo-album* (Everlastings). A small, annual plant, with spreading, decumbent stems two to four inches long, white, with woolly hairs; leaves one to one and a half inches, narrow, oblong, acute, half embracing the stem, margin wavy; receptacle depressed, bracts silvery. Distribution, most warm countries; habitat, sandy waysides, occasional. Heads pale yellow, glistening, one-eighth to one-quarter of an inch in diameter; May to July.

XIII. SENECEO.

Leaves alternate; involucre one-seriate, with a few exterior bracts; florets all tubular or outer radiate; pappus soft, simple.

1. *S. vulgaris* (Groundsel). An erect, annual weed, with a fleshy, angular stem, about a foot high; leaves pinnatifid, clasping the stem, lobes oblong, irregularly toothed. Heads few, drooping, in loose corymbs; outer bracts brownish. Distribution, introduced into all temperate climates; habitat, waste places, rather local. Heads one-third of an inch in diameter, yellow; April to July.

D. *Liguliferæ*. *Florets all ligulate (strap-shaped) and perfect; juice milky.*

XIV. CICHORIUM.

Perennial herbs; involucre double, consisting of eight inner bracts united at base, and five outer ones shorter and spreading; pappus two series of short, chaffy scales.

1. *C. Intybus* (Chicory). A perennial plant, with fleshy, tapering root; stem rough, erect, rigid, angular, one to three feet high, with bare, spreading branches; lower leaves deeply and sharply toothed backwards, upper narrow, cordate, clasping the stem. Heads sessile, distant, in pairs; bracts fringed with glandular hairs; florets about twenty, flat, five-toothed. Distribution, Europe, introduced America; habitat, waysides and cultivated ground. Heads bright blue, one to one and a half inches in diameter; summer months.

The root of this plant is largely used in many countries as a substitute for Coffee.

XV. TARAXACUM.

Perennial, stemless plants, bearing solitary flowers on naked, hollow scapes; involucre double, the outer bracts being shorter and curled back; receptacle naked; pappus consisting of several series of white, slender hairs.

1. *T. Dens-leonis* (Dandelion). Leaves all springing from the root, obovate, deeply and sharply toothed backwards, the lobes few serrate, with wavy margins; scapes erect, cottony at the top, rising higher after flowering and bearing a globular head of white, feather-like pappus; outer corollas brown on back; fruit two-beaked. Distribution, introduced into almost all countries; habitat, waste places, very common, often much stunted when growing on rocky soil. Heads bright yellow, one to two inches, almost all seasons.

XVI. CEREPS.

Annual or perennial herbs, with erect, branched stems. Achenia slender; pappus hairs simple, white, silky.

1. *C. lyrata*. Stem slender, furrowed, erect, one and a half to two feet high, much branched above, slightly pubescent; leaves

mostly radical, deeply pinnatifid toothed, the terminal lobe much the largest, tapering into the long, slender petiole. Heads small, very numerous in large, almost leafless, panicles; flower-stalks thread-like, outer bracts ovate, minute, inner about ten in number, narrow, equal, length of pappus. Florets ten to twenty; achenia smooth, yellow, ten-ribbed, not beaked. Habitat, roadsides Mount Langton, plentiful. Heads quarter-inch, bright yellow; March to May.

XVII. SONCHUS.

Annual, succulent plants, with alternate leaves; involucre oblong, imbricated, in about three rows; fruit compressed, grooved; pappus hairs many seriate, simple, silky.

1. *S. oleraceus* (Sow-thistle; Milky-thistle). An annual, erect plant; stem angular, hollow, one to three feet high, sparingly branched, branches rounded and grooved; lower leaves coarsely and reversely toothed or pinnatifid, with weak, spiny teeth, clasping the stem with their sharply-auricled base; upper leaves cordate, ovate, with ciliate teeth; involucre dilated at base; fruit ribbed and transversely wrinkled. Distribution, Europe, introduced America; habitat, a common weed everywhere. Heads half-inch in diameter, pale yellow; March to August.

2. *S. oleraceus*, sub-species *Asper*, is also common in cultivated ground and by waysides; the stem is stouter than in the foregoing; the wavy margins of the leaves are armed with sharp, spreading, prickly teeth, the upper ones clasping the stem, with rounded and reflexed auricles, whilst the fruit is not transversely wrinkled.

Nat: Ord: 38. Goodenovieæ.

Herbs or shrubs with alternate leaves without stipules; calyx superior, five-toothed; corolla superior, irregular, five-cleft, the edges of its lobes rolled inwards in the bud; stamens five, arising from summit of ovary; stigma surrounded at top by a membranous cup, which closes over the stigma after fertilization.

I. SCÆVOLA.

1. *S. Plumieri*. A straggling, seaside shrub, two to three feet high; stems stout, brittle, branching from the base; leaves fleshy, three inches long, broadly obovate, quite entire, smooth and shining; cymes one to three flowered, from axils of leaves; flowers supported by two short, horn-like bracts; calyx obsoletely five-toothed; corolla hairy on inside, one-lipped by being split to the base on upper side; the lip five-lobed, lobes fleshy with fringed wings. Style incurved, protruding through cleft in corolla, cup bearded. Fruit black, size of a small cherry, fleshy, two-celled, two-seeded. Distribution, Bahamas, Jamaica, &c.; habitat, sandy bays, Paget and Somerset. Flowers white, one inch, June to November.

Nat : Ord : 39. *Oleaceæ*. (Tribe *Oleineæ*).

Trees or shrubs with opposite, usually simple, leaves; calyx four-toothed, corolla regular, four-lobed, valvate; stamens two; ovary superior, two-celled, with two pendulous ovules in each cell; fruit a fleshy drupe.

This order is sparingly represented in Bermuda. The Privet (*Ligustrum vulgare*) is employed, though rarely, as a hedge, and the Olive as an ornament in shrubberies.

I. OLEA.

1. *O. Europæa* (Olive). An evergreen tree, ten to twenty feet high, with opposite, angular branches; leaves two inches long and quarter-inch wide, leathery, quite entire, oblong, pointed, hoary beneath. Racemes few-flowered, axillary; flowers supported by small bracts; corolla-tube short, limb flat, four-parted; stamens two, arising from base of corolla-tube; ovary one to two seeded by abortion. Distribution, Southern Europe; habitat, South cliffs, Paget, and in plantations. Flowers white, odorous; February to May.

Nat : Ord : 40. *Jasminaceæ*.

Shrubs with slender, often twining, stems, and opposite or alternate leaves; flowers in cymes; calyx and corolla five to eight parted, lobes of corolla overlapping each other; stamens two; ovary superior, two-celled, two-seeded; ovules erect; fruit a berry or capsule.

I. JASMINIUM.

1. *J. gracile* (Wild Jasmine). A smooth, climbing shrub, with slender, cylindrical branches; leaves opposite, simple, ovate, pointed; cymes with triple branches; calyx bell-shaped, with minute teeth; corolla with a slender tube and about six narrow, oblong lobes. Distribution, Jamaica, &c.; habitat, near caves. Flowers white, odorous; June to September.

The three following species of Jasmine are also frequently met with in gardens and shrubberies, the sweetness of their flowers throughout the summer months causing them to be general favourites :—

2. *J. Sambac* (Arabian Jasmine). A low, bushy shrub, with rusty, pubescent stems, and entire, heart-shaped, downy leaves; flowers nearly sessile; calyx-teeth slender, half-inch long; corolla with six to eight ovate lobes. Flowers white, one inch in diameter.

3. *J. fruticans* (Yellow Jasmine). An erect, bushy shrub, much branched from the base; leaves alternate, pinnate, leaflets three to five, ovate, entire; cymes terminal; calyx-teeth short, awl-shaped; corolla-tube half-inch long, limb five-lobed, lobes oblong, blunt. Flowers one inch in diameter, bright yellow.

4. *J. officinale* (White Jasmine). A smooth, climbing shrub, with opposite, pinnate leaves; leaflets three to seven, ovate-lanceolate, acute; cymes terminal, few-flowered; calyx-teeth slender, half the length of corolla-tube. Flowers white, very fragrant.

Nat: Ord: 41. *Plantaginaceæ*.

Herbaceous, stemless plants, with radical leaves and inconspicuous flowers arranged in spikes; calyx four-parted, persistent; corolla membranous, four-parted, inserted under ovary; stamens four, inserted in corolla and alternate with its lobes; filaments long, slender, persistent; anthers large, attached by middle; style simple; capsule membranous, splitting crosswise, two to four celled, cells one or few seeded.

I. PLANTAGO.

1. *P. major* (English Plantain). A perennial plant; leaves large, ovate, irregularly toothed on the wavy margin, six to eight inches long, four to six broad, petioles four to six inches long. Scapes axillary, nearly a foot long, terminating in a slender, whip-like spike of nearly equal length; flowers supported by ovate, concave bracts length of calyx, lobes of the latter ovate, blunt; capsule ovoid, crowned with persistent limb of corolla, containing eight to sixteen seeds. Distribution, Europe, America, &c.; habitat, common everywhere. Flowers greenish-white, inconspicuous; February to June.

An infusion of this and the following species is used in Bermuda as a cooling laxative drink, and the seeds are a favourite food for birds.

2. *P. lanceolata* (Ribwort). A perennial plant; leaves narrow lanceolate, six to eight inches long, about one inch wide, acute and tapering at base into a long, channelled petiole, strongly three to five ribbed, smooth or somewhat woolly; scape angular, eighteen inches high, terminating in a dense, ovate spike, about one inch long; bracts ovate, pointed; two lower calyx-lobes united; stamens very long, white; capsule oblong, one-seeded. Distribution, Europe, America, &c.; habitat, common everywhere. Flowers inconspicuous; almost all the year round.

3. *P. Virginica*. A biennial plant; leaves about three inches long and one wide, obovate, lanceolate, distantly toothed, pubescent, blunt-pointed, tapering at base into a short petiole; scape erect, angular, hairy, about six inches long; spike cylindrical, three to four inches; flowers somewhat distant below; corolla lobes erect, including the stamens; capsule ovoid, two-seeded. Distribution, United States; habitat, a rare plant in Bermuda. It was collected some years since by Governor Lefroy, and also grew near my house until about three years ago, when it disappeared, owing apparently to poultry picking off and eating the unexpanded flower-buds. Flowers yellowish; spring months.

Nat : Ord : 42. *Primulaceæ*.

Herbaceous plants ; leaves usually opposite or whorled, without stipules ; flowers regular ; calyx persistent, inferior, usually five-partite ; corolla, inserted under ovary, five-cleft ; stamens five, inserted on corolla, opposite to its lobes ; ovary superior, one-celled ; style and stigma simple ; capsule many-seeded, opening crosswise or by valves.

Varieties of the Chinese Primrose (*Primula Sinensis*) may be met with in gardens occasionally.

I. ANAGALLIS.

Capsule globose, opening crosswise when ripe.

1. *A. arvensis* (Pimpernel). An annual, procumbent plant ; stems slender, square, six to twelve inches long, much branched ; leaves opposite, ovate, dotted beneath ; flower-stalks axillary, longer than the leaves, bent downwards in fruit ; calyx five-partite, keeled ; corolla rotate, deeply five-partite ; capsule membranous, as above. Distribution, Europe and United States ; habitat, waysides and cultivated ground, common. Flowers about one-third of an inch, scarlet, closing on approach of rain, and hence called Shepherd's weather-glass ; January to June.

Nat : Ord : 43. *Gentianaceæ*.

Herbaceous plants, with ribbed, entire, opposite leaves, without stipules. Flowers regular ; calyx inferior, persistent, usually five-lobed ; corolla four to five lobed ; stamens inserted on corolla equal in number to its lobes and alternate with them ; ovary superior, one-celled, many-seeded ; style simple, stigma two-lobed ; fruit a many-seeded, two-valved capsule.

I. ERYTHRÆA.

1. *E. centaurium* (Centaury). An annual, erect herb, four to twelve inches high ; stem simple at base, but branching in threes above, four-angular ; leaves sessile in pairs, ovate, oblong, quite entire, half-inch long and half as wide. Flowers long, slender, in loose terminal cymes ; calyx five-parted, angular ; corolla-tube twice the length of calyx, limb small, spreading, with five oblong, acute segments ; stamens twisted, protruding from naked throat of corolla ; stigma roundish ; capsule slender, acute, opening lengthwise ; seeds minute, numerous. Distribution, Europe (America, rare) ; habitat, waysides and barren rocky hills, very common. Flowers rose colour ; February to June.

Nat : Ord : 44. *Apocynaceæ*.

Herbs or shrubs with a milky juice, and entire, usually opposite, leaves without stipules. Flowers regular, five-parted, solitary or in cymes ; calyx persistent ; corolla deciduous, the five-parted limb

twisted in the bud; stamens five, distinct, inserted on corolla; pollen, a granular powder; ovary superior, two-celled; fruit a many-seeded pod.

This order is represented in Bermuda by some very handsome but poisonous shrubs, of which the Oleander may be taken as a type. The Yellow Trumpet flower (*Cerbera Thuretia*) is found in many gardens and shrubberies. It is a tall, bushy shrub or small tree, with bright glossy leaves somewhat resembling those of the Oleander, but narrower and alternate; the yellow trumpet-shaped corolla is two or three inches long, and the fruit (a two-seeded drupe) is very poisonous.

The Frangipani (*Plumiera rubra*), locally called Red Jasmine, is a small tree, also frequent in gardens, the thickened, cylindrical branches terminating in clusters of large, alternate, oblong leaves, and large red flowers. The white-flowered species (*P. alba*) is also said to grow here, but I have not seen it. The Poor Man's Rose (*Vinca rosea*) is a general favourite in cottage gardens, and scarcely needs description; the white and the red-eyed varieties are, however, seldom seen.

I. NERIUM.

1. *N. oleander* (Oleander). A bushy evergreen shrub, six to twenty feet high, much branched from the base; leaves narrow, lanceolate, opposite or in threes, six inches long, one and a quarter inches wide, glossy above; corymbs terminal; calyx small, five-toothed; corolla salver-shaped, its throat furnished with a crown, consisting of five fringed leaflets; stamens short, inserted in middle of corolla-tube, anthers adhering to stigma by their middle and furnished with long, twisted, feathery appendages. Pods six to ten inches long, very narrow, comparatively rare; seeds with a feathery pappus. Distribution, shores of Mediterranean, &c.

The Oleander is said to have been only recently introduced into Bermuda, but is now one of the most striking features in the landscape. In the months of June and July the hedges which line the lanes and separate the fields are quite dazzling with the profusion of its glorious blossoms, while the air is laden with their perfume: they vary from white through various shades of pink and red to a deep scarlet, which almost vies with the cardinal bird in brightness, and gives a charming relief to the sombre monotony of the cedar foliage.

With all its beauty, however, the shrub is very poisonous, and cattle are said to die from eating grass which has grown under its branches; accordingly attempts have been made to destroy it, but this is by no means an easy task, and has not been very successful.

Nat : Ord : 45. *Asclepiadaceæ*.

An order of plants much resembling *Apocynaceæ*, but with the stamens usually united and adhering to the stigma, the pollen cohering into wax-like masses.

The Wax Plant (*Hoya carnosæ*) is trained along verandahs, over

doorways, &c. ; it has fleshy, oblong, pale leaves, and compact umbels of pink flowers.

I. ASCLEPIAS.

Calyx and corolla valvate, five-partite ; flowers furnished with a crown consisting of five hood-like leaves, each containing a little horn-like appendage ; pollen masses, five pairs, inserted in clefts in column ; stigma depressed, blunt.

1. *A. curassavica* (Butterfly weed). A perennial plant, two to four feet high, half shrubby at the base ; stems cylindrical, downy ; leaves opposite, lanceolate, pointed, entire, four inches long by one wide, shortly petioled ; umbels shorter than leaves, eight to twelve flowered ; petals ovate, rolled back, concealing the shorter sepals ; horns recurved, overhanging the central column ; pods (follicles) ovate, smooth, seeds imbedded in glossy, silky hairs. Distribution, West Indies ; habitat, waste places. Flowers showy, scarlet and orange, frequent ; July to November.

2. *A. linaria*. A species with white pendulous flowers and narrower leaves ; may be seen cultivated in gardens and Public Park.

Nat : Ord : 46. Convolvulaceæ.

Herbaceous plants or shrubs, with twining stems and alternate leaves without stipules. Flowers regular ; sepals five, overlapping each other, in one or more series, persistent ; corolla bell or funnel shaped, limb five-lobed, plaited in the bud ; stamens five, inserted in corolla-tube ; ovary two to four celled, style slender, stigma capitate or narrow and bifid ; fruit a two to four seeded capsule.

Several of the Convolvulaceæ are cultivated for the beauty of their flowers, their easy culture and the rapidity with which they cover unsightly walls, &c., with elegant evergreen foliage. Perhaps the most beautiful is the "Purple Morning Glory," which covers the whole south wall of the Public Park. The Noyeau Creeper (*Convolvulus dissectus*) is also common ; its leaves are divided into five to seven finger-like segments, the latter being again lobed or toothed : these leaves abound in prussic acid, and when bruised emit the well-known odour of bitter almonds. The flowers are white with a purple base. The Cypress Vine or Barbadoes Pink (*Ipomœa Quamoclit*) and *Ipomœa coccinea* are also garden favourites, being very pretty and easily trained : both have scarlet flowers, but while the former has pinnate leaves cut into slender segments, the leaves of the latter are entire, with a heart-shaped or angular base. *Ipomœa grandiflora* and some other species are also occasionally met with.

I. IPOMœA.

Sepals five ; corolla bell-shaped ; stamens not projecting beyond corolla-tube ; ovary usually two-celled, cells two-seeded ; stigma globular, entire, or two-lobed.

1. *I. Batatas* or *Batatas edulis* (Sweet Potato). A perennial vine; root bearing oblong, nutritious tubers; stems slender, twining or creeping, four to six feet long, rooting at nodes; leaves smooth, cordate at base, varying much in shape in the different varieties; petioles four to six inches long. Flower-stalks length of petiole, few-flowered; sepals oblong, pointed, a quarter the length of corolla, two outer shorter; corolla white or pink with a purple base. Distribution, cultivated in all warm countries, and largely grown in these Islands during the summer months; being difficult to eradicate it is often met with in a wild state.

The following appear to be the varieties most frequently grown :

A. *The five-finger*. Leaves cut nearly to the base into five to seven slender finger-like divisions, the middle lobe broader and longer; tubers white.

B. *The Lucy* (*St. Lucia* ?) Stem reddish; leaves nearly entire, heart-shaped, long-pointed, downy; tubers red.

C. Leaves angular, three to five lobed, lobes ovate, acute, the middle broader and longer; tubers white, pink at one end.

2. *I. Pes-caprae* (Seaside Convolvulus). A perennial creeper; stems smooth, reddish, branching from the root and spreading over sands and rocks for long distances, rooting at the nodes; leaves leathery, roundish, three to four inches in diameter, emarginate, with a small spiny projection of midrib, base heart-shaped with two glands; petiole one to two inches. Flower-stalks as long as petiole, about three-flowered; sepals ovate, two outer shorter; corolla tapering into short tube. Distribution, West Indies; habitat, seaside rocks and sandy bays. Flowers two to three inches, purple; July to October.

3. *I. sidifolia*. A perennial creeper; stem woody, contorted, much branched, ascending trees, &c., twelve to twenty feet; leaves heart-shaped, pointed, entire, velvety beneath. Cymes many-flowered; sepals oblong, blunt, two outer shorter; capsule one-seeded. Distribution, West Indies; habitat, hedges, rare, and cultivated in gardens. Flowers very numerous, one inch in diameter, white with purple base, odorous; October and November.

4. *I. Nil* or *Convolvulus Nil* (Purple Morning Glory). A perennial, twining vine; stems slender, leafy, interwoven and running over old walls, fences, &c.; leaves heart-shaped, entire, or three-lobed, softly hairy. Flower-stalks axillary, shorter than petioles, one to three flowered; sepals leafy, ovate, with a long point, hairy at base; corolla-tube cylindrical, one inch long, the limb gradually enlarging and spreading, five-lobed; capsule three-celled. This beautiful creeper is found both wild and cultivated, its purple flowers, two to three inches in diameter, are produced in profusion nearly all the year round.

II. DICHONDRA.

Sepals five-persistent; corolla five-partite; ovaries two, distinct, one-seeded; styles two,

1. *D. repens*. A small perennial, prostrate plant ; stems appressed to ground, slender, wiry, rooting and interlacing, forming patches some feet in diameter ; leaves cordate, orbicular, entire, half to one inch in diameter ; petioles two inches ; flowers axillary, on stalks quarter to one inch long ; sepals silky, oblong, blunt, rather longer than the ovate corolla-lobes ; capsule double, seed-like, enclosed in the persistent calyx. Distribution, West Indies and Southern United States ; habitat, very common, mixed with grass on uncultivated land and hillsides. Flowers insignificant, quarter-inch in diameter, greenish-white ; March to June.

Nat : Ord : 47. *Hydroleaceæ*.

Herbaceous plants with alternate leaves without stipules ; calyx five-partite ; corolla tubular, five-lobed ; stamens five, inserted in corolla ; ovary superior, many-seeded ; styles two, distinct.

I. NAMA.

1. *N. Jamaicensis*. An annual, pubescent plant ; stems eight to twelve inches long, prostrate, branching and radiating from the root ; leaves one to two inches long, obovate, entire, their broad base continued down the stem, forming wings ; flowers shortly stalked, axillary, solitary or in pairs ; sepals five, narrow, acute, silky, one-third of an inch long ; corolla tubular, scarcely longer than sepals, slightly compressed, lobes rounded regular ; stamens half the length of corolla-tube ; styles slender ; capsule superior, oblong, four-valved, many-seeded, enclosed in persistent sepals. Distribution, West Indies ; habitat, a frequent weed in gardens. Flowers white ; summer months.

Nat : Ord : 48. *Solanaceæ*.

Herbs or shrubs ; leaves alternate (floral ones sometimes in pairs) without stipules. Flowers usually regular, axillary ; calyx five-parted, persistent, inferior ; corolla hypogynous, five-lobed, limb plaited or folded in the bud ; stamens five, short, inserted on corolla-tube and alternate with its lobes, anthers two-celled, usually converging at their tips ; ovary two-celled ; style and stigma simple ; fruit a many-seeded capsule or berry.

This is a very important order of plants ; although a poisonous principle is found in many of the species, it yet contributes most valuable food products : foremost among these is the potato (*Solanum tuberosum*), now so largely grown in these Islands for the New York market (the exports which in 1870 were under 12,000 barrels had risen in 1883 to nearly 31,000 barrels). The Tomato (*Lycopersicum esculentum*) also belongs to this order, and the exports of this fruit are very considerable. The Egg-plant (*Solanum esculentum*) is grown for home consumption, and is conspicuous by its profusion of large, purple, egg-shaped fruit. Varieties of Capsicum or Bird Pepper (*Capsicum annuum* and *C. baccatum*) are grown in most cottage gardens. A few ornamental species are also worthy of notice, the white and purple Petunias being especial favourites ; the Brugmansia (*B.*

suaveolens) is also frequently seen in gardens: it is a leafy, bushy shrub, with large white trumpet-shaped flowers, eight to ten inches in length.

I. SOLANUM.

Corolla rotate (wheel-shaped), tube short; anthers converging; fruit a two-celled, many-seeded berry.

1. *S. aculeatissimum*. A perennial, prickly shrub, two to three feet high, branches spreading or trailing, armed with straight prickles quarter to half-inch long; leaves three to four inches long, ovate, pinnatifid, lobes oblong, margins wavy, midrib and veins prickly, both surfaces clothed with minute stellate down, and distant, long, simple hairs; cymes few-flowered, stalks slender, flowers drooping; calyx prickly; corolla star-like; anthers quarter of an inch long, yellow, almost sessile; berry globose, orange-scarlet, three-quarters of an inch in diameter, very poisonous. Distribution, West Indies; habitat, waysides and woods. Flowers white, half-inch in diameter; summer months.

2. *S. nigrum* (Black nightshade). An annual, erect plant; stem one to two feet, much branched, branches traversed with narrow, thorny wings; leaves two to four inches long, ovate, smooth, coarsely sinuate toothed, narrowing at base into the winged petiole; umbels arising from the stem below the leaves, drooping, few-flowered; calyx-lobes broad, blunt; stamens smooth; berry black, globose, one-third of an inch in diameter, seated on the reflexed calyx. Distribution, a very variable plant found in nearly every part of the world; habitat, waysides and waste places. Flowers white, one-third of an inch; anthers yellow; summer months.

II. DATURA.

Calyx tubular, five-angled, five-toothed, early falling off, but leaving a leathery, orbicular belt; corolla funnel-shaped, tube long; capsule two-celled, usually spiny; seeds kidney-shaped.

1. *D. stramonium* (Stinking weed or Thorn apple). An annual, erect plant; stem green, two to three feet high, smooth; leaves six to nine inches long, and four to six inches wide, ovate, with coarse angular sinuate teeth, unequal at base; flowers solitary in the forks of the stem; calyx-tube an inch long; corolla-tube three inches, cylindrical, limb plaited with five slender, awl-shaped teeth; anthers distinct, white; capsule ovate, erect, one and a half inches long, covered with stout spines. Distribution, most temperate and tropical countries; habitat, common in waste places and cultivated ground. Flowers white; May to August.

2. *D. Tatula*, a variety of the above, is the more common form in Bermuda; the stem is purple, flowers bluish-white, and anthers purple: the leaves of both are smoked as a remedy for asthma.

3. *D. Metel*. A stout, erect, pubescent plant, three to five feet high; branches succulent, cylindrical, softly hairy; leaves distant,

six to eight inches long, four to six inches wide, ovate, few-toothed or entire, acute, unequal at base, velvety; flowers very large, solitary in the forks; calyx bladderly, three inches long, with five short teeth; corolla-tube slender, limb spreading, with ten short, awl-shaped teeth; stamens five, distinct, length of corolla-tube; capsule pendulous, covered with spiny prickles, and seated in the leathery and reflexed belt of calyx. Distribution, West Indies; habitat, waste places, not common. Flowers white, six inches long; August and September.

III. NICANDRA.

Calyx with five prominent, acute angles, five-cleft, inflated; corolla bell-shaped, five-lobed; stamens distinct; fruit a dry, three to five celled berry, enclosed in persistent calyx.

1. *N. physaloides*. An annual, erect plant, one to three feet high; stems much branched, angular, smooth; leaves three to four inches long, half as wide, ovate, oblong, sinuate toothed, wedge-shaped at base; petiole slightly winged; flowers solitary, axillary; calyx-lobes arrowhead-shaped, acute; corolla slightly five-lobed; berry dry, many-seeded, size of cherry. Distribution, Peru, United States, Ascension, &c.; habitat, a frequent weed in cultivated ground. Flowers showy, one inch in diameter, blue with white tube; June to September.

IV. PHYSALIS.

Calyx five-cleft, inflated after flowering; corolla-tube short, limb rotate, five-lobed; stamens converging; fruit a fleshy, two-celled berry, enclosed in the persistent, bladder-like calyx.

1. *P. Peruviana*. L. (Cape Gooseberry). A perennial plant, all parts velvety with long, soft hairs; branches rather weak, spreading; leaves ovate or heart-shaped, long-pointed, irregularly toothed or entire; petioles short; flowers solitary, axillary; calyx-lobes lanceolate, long-pointed; berry size of small cherry, enclosed in the globose, ten-ribbed calyx. Distribution, West Indies; habitat, cultivated in gardens for its edible fruit, and occasionally met with as an escape. Flowers three-quarters of an inch in diameter, yellow with large purple spots at base; summer months.

2. *P. Linkiana*. Ness. (Cow Cherry). An annual, sub-erect plant, two feet high; stems widely branched, angular, purple spotted; leaves two to four inches long in unequal pairs, broadly ovate, sharply toothed, long-pointed, unequal at base; petioles one to two inches. Flowers drooping, solitary in axils; calyx-lobes slender-pointed; berry half-inch diameter, enclosed in the angular calyx. Distribution, South Carolina and West Indies; habitat, fields and waste places, frequent. Flowers half-inch diameter, yellow with purple spots at base and purple anthers; September.

3. *P. angulata*. L., a very similar species, is more rarely met with (e.g., near Causeway); the leaves are nearly entire or sinuate

toothed, the pale yellow corolla not spotted at the base, and the calyx less angular.

V. NICOTIANA.

Calyx five-cleft, persistent ; corolla funnel-shaped, with a long tube and five-lobed limb ; stamens five, included in corolla-tube ; fruit a two-celled, many-seeded capsule.

1. *N. Tabacum* (Tobacco). An annual, erect plant, four to six feet high, clothed with a sticky, glandular pubescence ; leaves large, lanceolate, entire, tapering to a point, sessile, the lower ones extending as wings down the stem ; flowers in cymes ; calyx-segments acute ; corolla-tube long, throat inflated, the acute lobes curled back ; capsule a little longer than the persistent calyx. Distribution, a native of Central America, now extensively cultivated in West Indies, United States, &c. ; habitat, waysides, old ruins, &c. Flowers pink, two inches long ; July to September.

An attempt has been recently made to revive the cultivation of Tobacco in Bermuda, but it has not yet been successful.

2. *N. glauca*, an evergreen tree with yellow flowers, is growing in Pembroke churchyard and other places.

Nat : Ord : 49. *Boraginaceæ.*

Herbaceous plants, rarely shrubs, with round stems and alternate leaves, destitute of stipules ; flowers usually on one side of a spirally-coiled (scorpioid) raceme ; sepals five, leafy, persistent ; corolla deeply five-lobed, regular ; stamens five, inserted on corolla and alternate with its lobes ; ovary deeply four-lobed, the simple style arising from their base ; fruit of four dry one-seeded nutlets (combined in *Tournefortia*) seated on the persistent calyx.

A few trees of the Scarlet Cordia (*Cordia Sebestiana*) overhanging the road at Pembroke Hall ; the fragrant Heliotrope (*Heliotropium Peruvianum*) is a universal favourite in gardens ; and the pretty blue-flowered Borage (*Borago officinalis*), and a shrubby species of *Tournefortia* (*T. laurifolia*), may be seen in the Public Park and other ornamental grounds.

I. HELIOTROPIUM.

Flowers in scorpioid spikes ; anthers sessile near base of corolla-tube ; nutlets four, distinct.

1. *H. curassavicum*. An annual, procumbent seaside plant ; stems much branched, radiating from the shrubby base, one to two feet long ; leaves pale milky green, fleshy, one to one and a half inches long by quarter of an inch wide, narrow lanceolate, quite entire, sessile ; spikes in pairs, elongating in fruit three to four inches ; sepals succulent ; corolla salver-shaped, smooth inside ; style short ; nutlets distinct. Distribution, West Indies and Florida ; habitat, very common on sandy shores. Flowers one-sixth of an inch, white, throat yellow, changing to purple ; May to October.

II. TOURNIFORTIA.

Flowers in scorpioid spikes ; stamens short ; fruit a four-seeded drupe.

1. *T. gnaphaloides*. A straggling seaside shrub, three to four feet high, trunk gnarled, twisted, and charred ; branches naked, kneeling, and rooting ; leaves sessile, crowded at end of branches, two to three inches long, one-third inch wide, reversely lanceolate, quite entire, blunt, very fleshy, clothed with white silky down ; spikes short, usually branching, not elongating in fruit ; flowers crowded, almost united ; calyx fleshy, silky ; corolla salver-shaped, silky outside, margin of lobes wavy ; drupe hollow at base. Distribution, Turks Island and West Indies ; habitat, seaside bays, usually forming clusters. Flowers half-inch diameter, white tinted with pink ; April to August.

Nat : Ord : 50. Labiate.

Herbaceous or shrubby plants, with square stems and opposite leaves, without stipules ; flowers in whorl-like, axillary cymes or solitary ; calyx tubular, persistent, ribbed, five-toothed, frequently two-lipped ; corolla two-lipped, upper lip entire or bifid, lower larger three-lobed ; stamens four, inserted on corolla, two long and two short, the upper pair sometimes absent ; ovary deeply four-lobed, style simple, arising from base of ovary, stigma usually bifid ; fruit of four dry, one-seeded nutlets, at base of persistent calyx.

The members of this order are rich in aromatic oils, which are stored in minute glands, and pervade all parts of the plant, rendering many of them valuable for culinary purposes, for which the following are cultivated in most kitchen gardens : the Sage (*Salvia officinalis*), Thyme (*Thymus vulgaris*), and Sweet Marjoram (*Origanum Marjorana*).

The Lavender (*Lavandula spica*) is used to keep away moths, &c., from clothing, while other species are cultivated for the beauty of their flowers and foliage ; for the latter the varieties of Coleus are much prized, the variety and richness of colour which they produce having caused their introduction into almost every flower garden.

The scarlet and purple Salvias (*S. splendens* and *S. purpurea*) are also general ; the Lion's ear (*Leonotis nepetifolia*), a showy West Indian plant, with large globose whorls of bright scarlet flowers, beset with spiny teeth, has been introduced into a few gardens.

A. Corolla nearly regular, four-lobed.

I. MENTHA.

Strong smelling, perennial herbs, with creeping, underground stems ; calyx five-toothed ; corolla-tube short, upper lobe emarginate ; stamens four, distant ; style much elongated.

1. *M. rotundifolia* (Wild Mint). Whole plant hoary, pubescent ; stems branching, ascending, one to two feet ; leaves sessile, round-

ish, blunt, one inch in diameter, much wrinkled, sharply toothed, woolly beneath; spikes cylindrical, the whorls somewhat distant. Distribution, Europe; habitat, marshes and waste places, very common around Hamilton. Flowers minute, pale pink; summer months.

2. *M. piperita* (Peppermint). Stems smooth, slender, erect or ascending, one to two feet high; leaves one to two inches long, petioled, ovate (upper lanceolate), sharply serrate, acute, rounded at the entire base, deeply veined, dark green; spikes terminal, slender, cylindrical, somewhat interrupted below; calyx reddish, teeth acute, hairy, nearly as long as corolla-tube. Distribution, Europe, introduced America; habitat, marshes. Flowers small, pink; summer months.

3. *M. viridis* (Spear-mint). Stems numerous, sub-erect, branching, one to two feet high, leaves nearly sessile, smooth, oblong lanceolate, one to two inches long, sharply serrated; spikes slender, cylindrical, whorls somewhat distant; bracts and teeth of calyx bristle-shaped. Distribution, England and United States; habitat, marshes and ditches, common. Flowers one-sixth of an inch, pale purple; summer months.

4. *M. aquatica*, sub-species *hirsuta*, var. *citrata* (Bergamot mint). Stems smooth and shining, purple; leaves petioled, ovate, sharply serrate, pointed, abruptly rounded at base, smooth on both surfaces, deeply veined; spikes terminal, sub-globose, three-quarters of an inch in diameter; calyx purple, smooth, the teeth slender, half the length of tube; corolla smooth. Distribution, England; habitat, marshes, common. Flowers purplish; summer months.

B. *Corolla two-lipped, stamens two.*

II. SALVIA.

Calyx and corolla two-lipped, stamens two, the filaments short and attached to sides of corolla, each jointed to middle of a much elongated connective, which bears at one end a fertile anther, and at the opposite (lower) end a barren one or none at all.

1. *S. coccinea*. A perennial, herbaceous plant; stem erect, six to 18 inches, hoary, pubescent; leaves one to two inches long, ovate, cordate, acute, crenate, hoary beneath, petiole half the length of blade; whorls distant, six to ten flowered; calyx ten-ribbed, the upper lip purple, entire, lower split, teeth triangular acute; corolla-tube widening upwards, upper lip entire, compressed, lower lip pendant, three-lobed, middle lobe larger, emarginate. Distribution, West Indies and Florida; habitat, dry hills and wayside banks, common. Flowers scarlet, very showy, three-quarters of an inch long; April to October.

2. *S. serotina*. A perennial plant, clothed with a whitish pubescence; stems six to twelve inches high, shrubby at base, branches slender, erect; leaves pale green above, velvety beneath, one-half to three-quarters of an inch long, triangular ovate, blunt, slightly

crenated ; petioles slender, length of blade ; whorls distant, two to six flowered ; calyx ten-ribbed, teeth triangular acute, clothed with glandular hairs ; corolla-tube little longer than calyx, upper lip short, lower three-lobed, erect ; anthers included. Distribution, Bahamas, &c. ; habitat, dry chalky banks and waysides. Flowers white, quarter-inch long ; April to October.

III. ROSMARINUS.

Calyx and corolla two-lipped ; stamens two, projecting, bearing a little tooth near the base.

1. *R. officinalis* (Rosemary). A very fragrant, perennial under-shrub ; stems one to two feet high, much branched ; leaves sessile, narrow, two inches long and quarter-inch wide, blunt, quite entire, hoary on both surfaces with whitish, stellate down, interspersed with oil glands, margin recurved ; flowers in axillary and terminal clusters ; upper lip of corolla two-parted, lower three-lobed, middle lobe largest and concave. Distribution, Southern Europe ; habitat, rocky hills, common, St. David's Island. Flowers blue.

c. *Corolla two-lipped ; stamens four.*

IV. CALAMINTHA.

Calyx slightly two-lipped, five-toothed, thirteen-nerved, throat hairy ; corolla-tube straight ; stamens four, distant, ascending and converging under upper lip.

1. *C. Nepeta* (Catnep). A perennial, strong-smelling, downy herb, one to two feet high ; stems straggling, at length erect, much branched at base, slender, brittle ; leaves small, quarter to one inch long, broadly ovate, obscurely serrated, on short petioles ; cymes opposite, arising from axils in upper part of stem, six to twenty flowered ; three upper calyx-teeth triangular, two lower awl-shaped, throat closed with a dense circle of hairs ; upper lip of corolla emarginate, lower three-lobed, spreading, middle lobe notched. Distribution, Europe and United States ; habitat, waste ground, everywhere. Flowers pale lilac, throat spotted, one-third of an inch long ; summer months.

V. STACHYS.

Whorls few-flowered ; calyx nearly equal, bell-shaped, five to ten nerved, five-toothed ; corolla-tube incurved, upper lip erect or spreading, lower lip three-lobed, side lobes reflexed ; stamens parallel, lower pair longest ; nutlets rounded, blunt at top.

1. *S. arvensis* (Hedge nettle). Annual ; stems slender, prostrate or ascending, one-half to one foot long, sparingly hairy ; leaves one-half to one inch long, ovate, blunt, crenate, base cordate or wedge-shaped, lower petioled, upper sessile ; whorls distant, consisting of six (or less) sessile flowers ; calyx quarter-inch long, teeth lanceolate, spinous-tipped. Distribution, Europe, Jamaica, and

United States; habitat, waysides, East Hamilton common. Flowers one-third of an inch, purple variegated with white; spring and autumn.

VI. LEONURUS.

Whorls many-flowered; calyx nearly equal, five-nerved and with five spiny teeth; corolla two-lipped; stamens parallel under upper lip; nutlets triangular, truncate at top.

1. *L. Cardiaca* (Motherwort). A stout, erect, perennial herb, two to three feet high; stems square, downy, leafy from the base; leaves on slender petioles, ovate, palmately cut into many, toothed lobes, upper leaves trifid; whorls distant, numerous, terminal and on the short axillary branches; calyx-teeth broadly triangular, bristly; corolla deeply divided, tube straight with a hairy ring inside, upper lip nearly flat, entire, lower three-lobed, middle lobe deeply emarginate. Distribution, Europe and North America; habitat, fields, rather local. Flowers half-inch long, rosy with purple veins; May to September.

VII. LAMIUM.

Whorls many-flowered; calyx nearly equal, five-nerved, teeth five, acute, not spiny; throat of corolla dilated, upper lip arched, concave, lower three-lobed, middle lobe broad and emarginate, lateral ones often toothed at base; nutlets triangular, truncate at top.

1. *L. amplexicaule* (Dead-nettle). A small, annual plant, four to ten inches high; stems weak, much branched from base; lower leaves on long petioles, roundish, sharply crenated, upper leaves broader than long, sessile, embracing the stem at their cordate base; whorls distant, dense in upper axils; calyx pubescent, teeth closing over nutlets; corolla-tube slender, much longer than calyx. Distribution, Europe and North America; habitat, waysides and cultivated ground, common. Flowers half-inch long, rosy variegated with white; January to May.

2. *L. purpureum* (Dead-nettle). Annual; stems decumbent, branching at the base, six to twelve inches high, purplish; leaves one-half to one and a half inches long, on long petioles, cordate, ovate, blunt, crenated; whorls crowded at end of branches; calyx-teeth triangular, spreading in fruit; corolla-tube straight. Distribution, Europe and North America; habitat, waysides and cultivated ground. Flowers half-inch long, purple; January to May.

Nat : Ord : 51. Verbenaceæ.

Herbaceous plants, shrubs, or trees, with square stems and opposite leaves, without stipules; calyx persistent, four to five toothed, inferior; corolla tubular, deciduous, four to five lobed, usually irregular or two-lipped, sometimes nearly regular; stamens usually four, two long and two short, inserted in corolla, sometimes two or five; ovary not lobed, two to four celled with one or two ovules in

each cell; style simple, stigma entire or bifid; fruit a two or four celled drupe, or dry and splitting when ripe into two to four one-seeded nutlets.

This order contributes a few garden plants, notably varieties of Verbena (*V. chamædrifolia*), which present a great diversity of colour—Scarlet, Purple, Lilac, and White. They are of very easy culture, and remain in flower all the summer months; the ribbed calyxes are half an inch long, and the spike contracted so that the clusters appear level topped. Another species of Verbena (*V. Bonariensis*) has rough, lanceolate, pointed leaves, clasping the stem, margin armed with spreading, spiny teeth; spikes elongating to three or four inches, arranged in threes; flowers deep purple, shorter than bracts. This species is also frequently met with as an escape in neglected ground. The Lemon-scented Verbena (*Aloysia citriodora*) has insignificant flowers, but is cultivated for the delightful fragrance of its bruised leaves.

The so-called Pigeon-berry (*Duranta Plumieri*) is a native of the Bahamas and Jamaica; it is to be found in almost all shrubberies and ornamental drives: a shrub or small tree six to twelve feet high, bearing smooth, glossy leaves, which are oblong or ovate, entire; flowers blue in long, leafless racemes, which become pendulous when bearing their wax-like, yellow berries,—they are about the size of a pea.

I. VERBENA.

Herbs with opposite leaves, and flowers in spikes; calyx five-ribbed, five-toothed, one tooth usually shorter than the others; corolla five-lobed, slightly unequal; stamens four, rarely two, included in corolla-tube; fruit splitting when ripe into four one-seeded nutlets.

1. *V. urticifolia*. An erect, roughly pubescent, perennial herb, two to three feet high, with long, slender branches and nettle-like leaves; the latter ovate or ovate lanceolate, acute, coarsely serrate, base contracted into the petiole; flowers small, sessile, distant, scattered along the slender, spreading branches of a compound spike; bracts rather shorter than the minute calyx. Distribution, North America and Jamaica; habitat, waysides and waste places around Hamilton. Flowers one-sixth of an inch, pinkish-white; June to September.

II. STACHYTARPHA.

Herbs or shrubs, with opposite leaves and flowers sunk in cavities in the elongated woody stem; calyx two to four toothed; corolla-tube curved, limb with five slightly unequal lobes; stamens two; fruit consisting of two one-seeded nutlets.

1. *S. jamaicensis* (Vervain). An annual, half-erect plant, one to two feet high; stems somewhat tufted and shrubby at the base, sparingly hairy, often purplish; leaves two to three inches long, ovate, coarsely serrate, tapering at the base, veins purplish; spikes rod-like, compressed, naked, six to eighteen inches long; flowers deeply sunk and covered by a lanceolate, pointed bract; calyx com-

pressed, two-toothed; corolla-tube protruding from summit, lobes flat, the two upper larger. Distribution, Bahamas and Jamaica; habitat, fields and waysides, common. Flowers blue, one-third of an inch in diameter; summer months. *Leaves used as a substitute for tea in West Indies.*

III. LIPPIA.

Prostrate herbs with opposite leaves; flowers in dense axillary heads; bracts imbricate; calyx compressed, two-toothed; corolla funnel-shaped, four to five lobed, obscurely two-lipped; stamens four, included in tube of corolla.

1. *L. nodiflora* (Capeweed). An annual, smooth, prostrate plant; stems often many feet in length, rooting at the swollen joints, down appressed; leaves one inch long, reversely lanceolate, or spatulate, sharply serrated above the middle, veins terminating in the sinuses, entire and wedge-shape below, tapering to the short petiole; flower-stalks simple, axillary, two to three inches long, terminating in the dense ovoid head of small flowers; bracts purple, imbricate, ovate, pointletted, little shorter than corolla; calyx obscure, membranous, split to base on lower side, nearly as long as corolla-tube, to which it closely adheres and finally encloses the dry, two-seeded drupe. Distribution, Bahamas and Jamaica; habitat, neglected ground, a very common creeping weed. Heads one-third of an inch in diameter, purplish-white; summer months. Probably indigenous. *Leaves sometimes used as a substitute for tea.*

IV. LANTANA.

Erect, strong-scented shrubs, with rough leaves and flowers collected in heads; calyx membranous, obscurely four-toothed; corolla four-lobed, slightly two-lipped, upper lip broad, lower three-lobed, middle lobe longest; stamens included in corolla-tube; fruit a cluster of berry-like drupes.

1. *L. odorata* (Common Sage-bush). An erect, bushy shrub, four to six feet high, with brittle, contorted branches; stems angular, covered with a rusty pubescence; leaves two to three inches long, broadly ovate or oblong, blunt, regularly crenate, glossy above, rough on both surfaces with prominent veins and short, stiff hairs; flower-stalks axillary, about two inches long, terminating in subglobose heads, surrounded with persistent leafy bracts, the two outer being as long as the exterior flowers, inner bracts ovate, acute, half as long as corolla-tube; drupe compressed, pink. Distribution, West Indies; habitat, hills, waysides and unreclaimed land, very common, probably indigenous. Flowers pale pink, *throat yellow*; heads one-half to three-quarters of an inch in diameter; summer months.

2. *L. crocea* (Red Sage-bush). An erect, handsome shrub, branching from the base; stems angular, regular; branchlets herbaceous, rough, with bristly hairs; leaves two to three and a half inches long, ovate, acute, regularly serrate, hispid above, thinner and less wrinkled than the last species; flower-stalks two inches long, heads flat-

tish, without involucre bracts; floral bracts slender, long-pointed, half as long as the (half-inch) corolla-tube; drupe globose, one-quarter of an inch in diameter, purple. Distribution, Bahamas; habitat, waysides, plantations, &c., common. Flowers yellow, changing to orange-red; heads one to one and a half inches in diameter; summer months.

3. *L. aculeata* (Prickly Sage-bush). A few trees of this species grow near Public Buildings, stems and flower-stalks prickly and flowers changing from orange to red. I have not met with it out of cultivation.

V. CITHAREXYLUM.

Trees with opposite, entire leaves and odorous flowers, in spikes or racemes; calyx bell-shaped, five-toothed; corolla funnel-shaped, limb five-lobed, nearly regular; drupe two-celled, cells one or two-seeded.

1. *C. quadrangulare* (Fiddlewood). A tall tree, twenty to forty feet high; trunk and larger branches cylindrical, branchlets four-angled; leaves three to eight inches long, papery, smooth and shining, ovate, oblong, quite entire, tapering to a bluntish point, rounded at base, shortly petioled; racemes nodding, elongating to ten or twelve inches; calyx one-twelfth of an inch long, membranous, closely applied to corolla-tube; drupe black. Distribution, West Indies; habitat, roadsides and plantations, not uncommon. Flowers white, quarter-inch in diameter; September and October.

The slender, wiry axis of the spike is persistent, and hangs withered from the branches for months after the fruit has fallen off. A valuable timber tree.

VI. CALLICARPA.

Shrubs with simple leaves and axillary cymes of small flowers; calyx four-toothed; corolla bell-shaped, with four equal lobes; stamens four, protruding; drupe four-seeded.

1. *C. ferruginea*. A shrub three or four feet high; branches, petioles, and under surface of leaves clothed with rusty, woolly down; leaves three to four inches long, broadly lanceolate, serrate, pointed, tapering at base into the petiole; cymes terminal and axillary, many-flowered; calyx glandular; drupe sub-globose, red. Distribution, Jamaica; habitat, woods near caves. Flowers pale blue, quarter-inch in diameter; June.

VII. CLERODENDRON.

Shrubs with simple, opposite leaves, and nearly regular, five-lobed flowers; stamens four, greatly protruding; fruit a four-seeded berry.

1. *C. aculeatum* (Wild Coffee). A bushy shrub, five to six feet high; branches rounded; leaves one and a half inches long, oval, glossy, quite entire, tapering at base into the short, jointed petioles; the latter falling off, but leaving short, abrupt spines; cymes axillary, usually three-flowered; calyx short, with five triangular,

spreading teeth; corolla-tube one inch long, slender, lobes oblong, spreading; stamens slender, purple, the lower pair exceeding corolla by an inch; style still longer, terminating in a shortly-bifid stigma; berry globose. Distribution, West Indies; habitat, woods near caves and frequently cultivated as an ornamental hedge. Flowers white, two-thirds of an inch in diameter; August and September.

VIII. AVICENNIA.

Trees with leathery leaves and white flowers; calyx bell-shaped, shortly five-toothed; corolla nearly regular; tube short; lobes four, rotate; stamens four, in nearly equal pairs; fruit leathery, one-seeded, seed germinating within the capsule.

1. *A. nitida* (White Mangrove). A tree fifteen to twenty feet high; trunk and branches sending down secondary roots; branchlets and under side of leaves covered with a dusty-whitish pubescence; leaves three inches long, leathery, oval or oblong, quite entire, shortly petioled; flowers in terminal clusters; style and stamens of equal length, stigma bifid; capsule ovoid, compressed, pointed, downy, supported by persistent calyx. Distribution, West Indies; habitat, Mangrove Swamps, of which it forms the greater part, intermixed with the true Mangrove, from which it is easily distinguished by its dusty-white appearance. Flowers white, one-third of an inch, stamens black; May to September.

Nat: Ord: 52. Acanthaceae.

Herbs or shrubs with opposite, simple leaves, without stipules; flowers usually in imbricated heads, supported by bracts; calyx five-parted; corolla tubular, limb five-lobed, usually two-lipped; stamens in two pairs of unequal length, one pair sometimes absent, inserted in tube of corolla; capsule two-celled, opening with elasticity when mature, seeds supported by hooks or cup-shaped processes.

This order is only represented in Bermuda by a few ornamental plants. *Thunbergia alata* is a twining vine frequently seen in gardens, ascending verandahs, &c.; it has heart-shaped leaves, borne on a winged petiole, its flowers are about an inch in diameter, of a deep orange colour with purple veins, and are borne on axillary stalks. *Thunbergia fragrans* is a Jasmine-like creeper with fragrant white flowers. Several species of *Justicia* are cultivated in gardens; the flowers are two-lipped. One species, the Red *Justicia* (*J. turrida-sanguinea*), is frequently met with.

Nat: Ord: 53. Bignoniaceae.

Shrubs or trees, erect or climbing, with opposite leaves, destitute of stipules; flowers showy, monopetalous, five-cleft, bilabiate or nearly equal; stamens four, in unequal pairs, usually with a fifth rudimentary one; ovary superior, two-celled; style simple, stigma two-lobed; fruit a one or two celled, many-seeded capsule, opening by two valves.

Several species of these handsome trees and shrubs have been introduced to add to the beauty of our parks and gardens; the most general favourite appears to be the Red Trumpet-flower (*Tecoma Capensis*), formerly called *Bignonia Capensis*, a climbing shrub eight to ten feet high; it is often supported against walls or fences; it has compound leaves, bearing seven to nine small ovate, bluntly-serrate leaflets, which bear a small tuft of hairs in the axils of the veins beneath; the trumpet-shaped flowers are orange-scarlet, very profuse in terminal racemes, calyx small, five-toothed, corolla tubular, nearly two inches long, the limb two-lipped, with the stamens and style projecting from under the upper lip. Other species (some of which I have not verified), contained in former lists as growing here, are, *Tecoma radicans*, a species climbing to a considerable height by means of tendrils, with much larger leaves than the last-named species, the stamens being included in the long scarlet corolla.

Tecoma stans is an erect shrub, about ten feet high, with pinnate leaves, the leaflets lanceolate, serrated; bearing large yellow flowers, with the corolla-tube inflated above the base. A specimen of this may be seen growing near Dr. Hinson's.

Tecoma pentaphylla is a handsome evergreen tree (locally called White Cedar), several of which are growing around Public Buildings and along Front Street, Hamilton. The oblong leaflets are from three to five in number, leathery, glossy, quite entire, four to six inches long; flowers two and a half inches long and the same in diameter, rosy white; the stamens are short, at base of corolla-tube. *Tecoma obliquifolia* and one or two other species are said to grow in parks.

The most useful member of this order, however, to the native of Bermuda is the Calabash (*Crescentia Cujete*); trees of this species are scattered through the Islands, being grown for the sake of the hard shell of the fruit, which is used for holding water, baling boats, &c.; the leaves are quite entire, reversely lanceolate or wedge-shaped, nearly sessile and growing in rosette-like clusters along the long, cylindrical, spreading branches, give to this tree a peculiar and unmistakable appearance; the solitary flower-stalks arise direct from the branches; the calyx is deeply divided into two ovate, blunt, leathery segments; corolla five-cleft, the lobes fringed with wavy teeth; the fruit is about the size of a cocoanut.

One specimen growing at Walsingham is of especial interest as that under whose shade the poet Moore received some of his happy inspirations.

Nat.: Ord.: 54. *Scrophulariaceae*.

Herbaceous plants, rarely shrubs; leaves usually opposite or upper alternate; flowers irregular, calyx inferior, persistent, five-parted; corolla imbricated in the bud, four or five lobed, more or less irregular or two-lipped; stamens usually four, in pairs of unequal length, the rudiments of a fifth being frequently present, one pair sometimes absent; ovary two-celled, style simple, stigma two-

lobed; fruit a two-celled, many-seeded capsule; seeds attached to a central axis.

This large order, although well represented in Bermuda, contains no plants of economic value. A few are well-known garden flowers, as the Snap-dragon (*Antirrhinum majus*), and the Monkey-flower (*Mimulus luteus*); an almost leafless shrub, *Russelia juncea*, with rush-like, jointed branches, and long, scarlet, tubular flowers, called Heath in Bermuda, is also common.

A. Flowers nearly regular; corolla rotate or bell-shaped, tube short; stamens four or five.

I. VERBASCUM.

Woolly herbs with alternate leaves; flowers in a dense, woolly spike; calyx five-partite; corolla with a short tube and four or five slightly irregular, spreading lobes; stamens five, unequal; capsule ovoid, two-celled.

1. *V. thapsus* (Mullein or Blanket Leaf). An annual, erect herb; stem simple or with few branches, stout, two to four feet high; lower leaves six to twelve inches long, ovate-oblong, nearly entire, densely woolly on both sides, their base continued down the stem in the form of wings; spike simple, one to two feet long, very dense and woolly; two stamens longer, smooth, other three shorter and hairy. Distribution, Europe and United States; habitat, a conspicuous weed in neglected fields and waste ground. Flowers golden yellow, three-quarters of an inch in diameter; June to October.

II. BUDDLEJA.

Shrubs with opposite leaves; calyx and corolla four-lobed; stamens four, included in corolla-tube.

1. *B. Americana* (Snuff plant). A shrub six to ten feet high, much branched from the base, branches woolly with white stellate down; leaves three to four inches long, ovate or oblong, acute, margin with few obscure, wavy teeth, base tapering into petiole, the latter and under surface of leaves white with woolly down, upper surface smooth, dark green; panicles four to six inches long, many-flowered, pyramid-shaped; calyx minute four-toothed; corolla funnel-shaped, lobes ovate-oblong; stamens inserted in throat of corolla. Distribution, Jamaica, Texas, &c.; habitat, hedges and shrubberies occasional. Flowers yellow, one-sixth of an inch; June to August.

III. CAPRARIA.

Erect, shrubby herbs with alternate leaves; calyx and corolla five-cleft; stamens four or five, included in corolla-tube; capsule four-valved, many-seeded.

1. *C. biflora* (Goatweed). A smooth, leafy, perennial undershrub, two to four feet high; branches erect, tough; leaves sessile, oblong-lanceolate, one and a half inches long, half-inch wide, coarsely

serrated, teeth sharp and spreading, fringed with hairs on margin; flowers in pairs, stalked, axillary; calyx deeply five-cleft, segments slender, acute; corolla-lobes oblong-lanceolate; stamens four, short, arising from near the base of corolla; stigma globose; capsule quarter-inch long, oblong, equalling the persistent calyx. Distribution, Bahamas, Turks Island, &c.; habitat, waysides, East Hamilton common. Flowers white, one-third of an inch; August to November.

IV. HERPESTIS.

Small perennial creeping plants with opposite leaves and solitary, axillary flowers, the latter supported by a pair of bracts; sepals five, unequal, three outer larger and covering the two inner; corolla four or five lobed, obscurely two-tipped; stamens in two pairs of unequal length; capsule four-valved, many-seeded.

1. *H. Monneira*. A smooth, prostrate, creeping plant, with a round, fleshy stem, contracted and rooting at the nodes; leaves half-inch long, sessile, fleshy, entire, obovate, wedge-shaped; flower-stalks one inch long, bracts slender at base of sepals; outer sepals triangular ovate, inner slender; corolla-lobes nearly equal; stamens slightly longer than the short corolla-tube. Distribution, Bahamas and Southern United States; habitat, wet fields and edges of marshes, common. Flowers white with purple throat, one-third of an inch in diameter; August and September.

V. VERONICA.

Small herbaceous plants with opposite or alternate leaves; calyx four-partite; corolla deeply cleft into four slightly unequal lobes; stamens two, diverging, inserted on the fugitive corolla; capsule compressed, two-celled, few-seeded.

1. *V. agrestis* (Speedwell). Annual; stems slender, prostrate, branching from the base, four to six inches long, slightly hairy; leaves petioled, half-inch long, roundish ovate, coarsely serrate, floral leaves similar, alternate; flower-stalks axillary, one-flowered, length of leaves; sepals equal, ovate, fringed with hairs, enlarging in fruit; capsule roundish, two-lobed. Distribution, Europe and North America; habitat, neglected gardens, &c. Flowers quarter-inch diameter, pale blue, veined; March to May.

2. *V. arvensis* (Speedwell). Annual; stems rigid, erect, or ascending, sparingly branched, four to eight inches long, pubescent; lower leaves petioled, one-third to half-inch long, cordate, ovate, pubescent, with few serratures, floral leaves alternate, sessile, bract-like, lanceolate, entire; flowers almost sessile in a long, leafy raceme; sepals unequal, narrow, fringed with hairs, longer than the minute corolla; capsule heart-shaped, shorter than persistent sepals. Distribution, Europe and North America; habitat, neglected gardens, &c. Flowers one-eighth of an inch, pale blue; March to May.

3. *V. perigrina*. Annual; stem erect, smooth, sparingly branched, four to eight inches high; leaves oblong, blunt, few-toothed, rather

fleshy, lowest shortly petioled, stem leaves sessile, narrower; flowers solitary, axillary, nearly sessile, shorter than the slender, entire, floral leaves; sepals narrow, lanceolate, longer than the minute corolla; capsule orbicular, emarginate, about twenty-seeded. Distribution, Europe and North America; habitat, cultivated ground. Flowers one-eighth of an inch, white; March to June.

B. *Flowers irregular; corolla two-lipped or personate, tube long, spurred or enlarged at base.*

VI. MAURANDIA.

Climbing vines with solitary, axillary flowers; calyx five-partite; corolla tubular, inflated above the base, upper lip two-lobed, reflexed, lower three-lobed; throat open, or closed by a projecting palate formed by a fold of the lower lip.

1. *M. sempervirens*. A smooth evergreen climber, with long, slender, wiry stems; leaves triangular, with acute, spreading lobes at the base; sepals lanceolate acute, smooth; corolla-tube puckered, throat slightly compressed, open; stamens four, included in tube; capsule ovoid, two-lobed, unequal at the base, many-seeded. Distribution, North America; habitat, climbing along hedges, Hamilton to Prospect, also cultivated in grounds. Flowers an inch long, pale purple; summer months.

2. *M. Barclayana*. This species is also to be found in gardens; the habit and foliage are similar to the former, but the purple flowers are larger and the segments of the calyx are clothed with long, glandular hairs.

3. *M. antirrhiniflora* (Roving Sailor). A more fragile species with slender, interwoven stems, is common on rockwork and twining along verandahs; the corolla is smaller (half-inch long), the tube closed by the projecting, speckled palate, and the lips are of a deep blue colour.

VII. LINARIA.

Erect or twining herbs; calyx five-partite; corolla very irregular, upper lip two-lobed, reflexed, lower three-lobed, with the middle lobe smallest, mouth closed with a prominent palate, tube inflated and spurred at base; stamens four, in unequal pairs; capsule ovoid, opening by pores at the summit.

1. *L. vulgaris* (Toadflax, Yellow Snapdragon). A perennial, erect plant, one to two feet high, tufted at base; stems slender, smooth, leafy; leaves one to two inches long, one-eighth of an inch wide, opposite, alternate or in whorls of three; racemes terminal, crowded; calyx short, lobes triangular, leafy; corolla with a long, straight, pointed spur, as long as the tube and much longer than the calyx. Distribution, Europe and North America; habitat, roadsides and waste places, probably an escape from gardens where it is frequently cultivated. Flowers showy, yellow, with a deep orange palate; summer months.

2. *L. Elatine*. An annual, creeping, hairy plant; branches very slender, one to two feet long, numerous, arising from the short stem; petioles slender, one inch long, bearing broadly ovate, halberd-shaped leaves half to three-quarters of an inch long, with prominent lobes at the base and a sharp point; flower-stalks long, thread-like, axillary, given off with great regularity at right angles to the stem; sepals lanceolate; spur of corolla straight, awl-shaped, palate closing the throat; capsule globose, few-seeded. Distribution, Europe and North America; habitat, waysides, rare (*e. g.*, Scaur Hill and Causeway). Flowers yellow, with a purple upper lip; May.

DIVISION III.—APETALÆ.

Flowers incomplete, the corolla, and sometimes the calyx also, being absent. *The flowers of this division of plants are usually green and inconspicuous, but the want of petals is in some cases atoned for by the bright colour of external bracts, or of the calyx.*

Nat : Ord : 55. Polygonaceæ.

Herbs (rarely trees) with alternate, simple leaves and stipules sheathing around the stem; flowers frequently unisexual (*i. e.*, with the stamens and ovary on separate flowers); calyx three to six cleft, persistent, inferior, usually coloured and corolla-like; stamens three to twelve, inserted on calyx; ovary superior, one-celled, with a solitary, erect ovule; styles one to three; fruit a triangular nut enclosed in the calyx.

The garden Rhubarb (*Rheum Rhaponticum*) has been frequently cultivated, but with indifferent success.

I. POLYGONUM.

Herbaceous plants with tubular sheathing stipules; calyx five-partite, petal-like; stamens usually eight; styles three; nut triangular, enclosed in withered calyx.

1. *P. Fagopyrum* (Buckwheat). An annual, erect, smooth plant, two to three feet high; leaves arrowhead-shaped, cordate at base, sheath membranous; flowers numerous in short, axillary racemes; calyx coloured, five-parted; stamens eight, alternating with as many glands; styles three; nut acutely triangular, shining, black, twice as long as the withered calyx. Distribution, cultivated in many countries for its edible grain; habitat, neglected marshy fields, Pembroke,—probably a remnant of former cultivation. Flowers pale rose colour; July to September.

2. *P. convolvulus* (Black bindweed). An annual, twining vine; stems angular, one to three feet, slender, roughish; leaves one to two inches long, halberd-shaped, taper-pointed, cordate at base, side lobes acute or rounded, petioles half the length of leaves; sheath smooth; flowers in interrupted, leafy racemes; calyx five-parted, the three outer lobes keeled and covering the triangular,

black, granular nut; stamens eight; styles three. Distribution, Europe and North America; habitat, waysides and waste places, rare. Flowers greenish-white; August.

A third species (*P. acre*) was found by me in marshes near Prospect, but I have not the specimen by me, neither has it been confirmed; it is a slender plant with narrow lanceolate leaves, both they and the calyx sprinkled with brownish dots. It is a native of Jamaica and Southern United States.

II. RUMEX.

Herbaceous plants; sepals six, irregular, the three inner enlarging and bearing tubercles on their back; stamens six; nut triangular.

1. *R. obtusifolius* (Dock). Root perennial, stem stout, erect, angular, two to three feet high; leaves petioled, lower six to ten inches long and half as wide, oblong-ovate, cordate at base, often red-veined, obtuse, margin wavy, upper oblong-lanceolate; panicle leafy, branched, whorls distant, flower-stalks rather shorter than the fruiting sepals, the latter prominently veined and bearing several spreading, spiny teeth on the margin, the upper sepal bearing also a prominent tubercle. Distribution, Europe and North America; habitat, a common wayside weed. Flowers green, sepals quarter-inch long in fruit; January to March.

2. *R. sanguineus* (Dock). Root perennial, stem slender, erect, reddish, two to three feet high; leaves oblong-lanceolate, fiddle-shaped, six to ten inches long, cordate at base and usually contracted above it, veins blood-red, margin slightly wavy; panicle leafy at the base, whorls distant, many-flowered; fruiting sepals oblong, blunt, without teeth, the upper bearing a prominent tubercle. Distribution, habitat, &c., as in former species.

3. *R. crispus* (Curly Dock). Root perennial, stem erect, furrowed, branching above, two to three feet high; lower leaves oblong-lanceolate, margins much waved or crisp, tapering or rounded at the base, six to ten inches long, two inches wide, upper leaves smaller, lanceolate, acute; panicle leafy below, branches erect, whorls distant, many-flowered, flower-stalks slender, one-quarter to one-third of an inch long; fruiting sepals broadly cordate, veined, entire or slightly toothed towards the base, the upper bearing a broad, smooth tubercle, the others bearing a smaller one. Distribution, habitat, &c., as in the former species.

III. COCCOLOBA.

Trees with large, broad, leathery leaves.

1. *C. uvifera* (Seaside Grape). A tree ten to twenty feet high, with smooth, regular, spreading branches; sheath smooth, reddish-brown, surrounding the stem; leaves smooth, shining, cordate or orbicular, three to six inches long and often broader, shortly petioled; flowers on slender-jointed stalks, forming simple drooping racemes; calyx five-partite, stamens eight, styles three; berries purplish, size of grapes. Distribution, West Indies; habitat, sandy seashores, common. Flowers small, whitish.

Nat : Ord : 58. *Nyctaginaceae*.

Herbs or shrubs with swollen joints and opposite entire leaves ; calyx tubular, bright coloured, corolla-like, the upper portion falling off, leaving the persistent base, which hardens and envelops the one-celled, one-seeded fruit ; stamens one to eight.

To this order belongs the beautiful creeper *Bougainvillea (B. spectabilis)*, which has overspread the wall bordering the carriage drive to Mount Langton, and has been introduced into many gardens. Its beauty consists of the large, scarlet, leafy bracts, which grow in triplets, and from which the more modest flowers arise.

I. MIRABILES.

Herbs with regular, five-lobed flowers, each surrounded by a five-lobed, calyx-like involucre, stamens five.

1. *M. Jalapa* (Four o'clock). A smooth, perennial plant, two to three feet high : roots large, tuberous ; stems stout, erect, regularly forking at the brittle, swollen joints ; leaves ovate, long-pointed, sub-cordate at base ; flowers in terminal clusters of six to eight, shortly stalked ; lobes of involucre ovate, acute, enlarging after flowering, at length spreading ; calyx-tube slender, two inches long, limb spreading ; stamens and style protruding ; fruit sub-globose, five-ribbed, size of pea, black, wrinkled, flowery within. Distribution, Peru, West Indies, and United States ; habitat, waysides, common as an escape from cultivation.

This well-known plant opens its brilliant flowers at four in the afternoon and closes them early on the following morning ; although red is the prevailing colour, other varieties are by no means uncommon, as white, yellow, and white with red centre ; the blossoms are profuse and continue unfolding throughout the summer months.

M. dichotoma, a species with smaller flowers, is said to be also found in our gardens, but its distinguishing characteristics are not very clear.

II. BOERHAAVIA.

Slender herbs with minute flowers, stamens one to four.

1. *B. erecta*. An annual, nearly erect plant, two to three feet high, stem smooth, leafy below, dividing above into numerous slender, leafless branches ; leaves about two inches long, opposite, in unequal pairs, ovate, pointed, whitish beneath, margin wavy ; panicle much branched ; flower-stalks thread-like, bracts minute ; calyx bell-shaped, regularly five-lobed, the base remaining and hardening around the five-ribbed, club-shaped fruit, the latter one-eighth of an inch long. Distribution, West Indies and Southern United States ; habitat, a weed very common in cultivated ground. Flowers minute, pale pink ; summer months.

Nat : Ord : 57. *Phytolaccaceae*.

Herbs or shrubs with alternate leaves and perfect flowers ; calyx

five-partite, inferior; petals five, arising from base of calyx; stamens ten; ovary consisting of five one-seeded carpels cohering in a circle, from each of which a distinct style arises.

1. *SURIANA*.

1. *S. maritima* (Sea side Lavender). An erect, bushy shrub, two to four feet high, with erect, pubescent, reddish branches; leaves crowded an inch long by quarter-inch wide, reversely lanceolate, tapering to the sessile base, fleshy, covered with short whitish down; clusters about six-flowered; calyx five-partite; petals the length of calyx; stamens ten, of which half are abortive; styles five, length of stamens. Distribution, Bahamas, Turks Islands; habitat, rocky shores, frequent. Flowers half-inch, yellow; June to September.

The natural arrangement of the above plant is doubtful; it is sometimes placed in Rutaceæ.

Nat: Ord: 58. *Chenopodiaceæ*.

An order of weed-like herbs with alternate, usually simple leaves, sometimes leafless; stipules none; calyx small, greenish or none; petals none; stamens inserted in base of calyx and opposite to its divisions; styles usually two; ovary one-celled, becoming a one-seeded fruit, loosely enclosed in its membranous covering and frequently in the persistent calyx.

The Beet (*Beta vulgaris*) is a member of this order, and is largely grown in Bermuda; the crop, however, suffers much from the ravages of caterpillars. The Bridal-wreath (*Boussingaultia baseloides*) is often seen in gardens; it is a smooth creeping vine of rapid growth, twining up trees or along verandahs and soon covering arbours with a thick cloak of fleshy, ovate, cordate leaves, the fragrant white flowers, which appear in profusion towards the end of summer, are in long, slender racemes, six to eight inches in length. It seldom produces seed, but is readily propagated by means of adventitious roots.

1. *CHENOPODIUM*.

Flowers regular; calyx five-parted, persistent, but not fleshy, more or less enclosing the fruit; stamens five; seeds brittle, polished.

1. *C. album* (Figweed). An erect annual, two to four feet high; stems grooved, sparingly branched; leaves one to three inches long on slender petioles, rhomboid-ovate, more or less sinuate toothed, wedge-shaped at the entire base, whitish with powdery scales, upper leaves oblong, entire; flowers in almost leafless panicles, consisting of roundish clusters collected in spikes; sepals keeled, closing over the fruit; seeds black, shining; stamens five. Distribution, Europe and North America; habitat, waysides and cultivated ground. Flowers minute, green, mealy.

2. *C. murale*. Annual; stems branched, decumbent or ascending, six to eighteen inches, grooved; leaves petioled, smooth, bright green, rhomboid-ovate, sharply and irregularly toothed except at

the acute, wedge-shaped base, upper leaves lanceolate serrate; spikes half-inch long in a leafless panicle, axillary and terminal; sepals slightly keeled, partly covering the fruit; stamens five, projecting. Distribution, Europe and North America; habitat, waste places. Flowers green, mealy; September.

3. *C. anthelminticum* (Worm seed). A perennial, erect, leafy plant, of a bright green colour and strong aromatic smell, two to three feet high; stem sparingly branched, angular and grooved; leaves ovate-oblong, two to three inches long, one inch wide, tapering into petiole at base, acute, deeply sinuate-toothed, glandular; flowers clustered in little whorls along numerous slender, leafless spikes, which form part of a branched, leafy panicle; calyx-lobes ovate, not keeled, enclosing the fruit; stamens five, styles three; seeds rounded, dark-brown, shining. Distribution, United States; habitat, neglected ground, frequent. Flowers minute, yellowish-green; August to October.

II. BLITUM.

Calyx three to five partite, becoming fleshy and covering the fruit; stamens five; styles two.

1. *B. maritimum*. An annual, fleshy plant; stem one to two feet high, much branched; leaves one to two inches long, succulent, triangularly lanceolate, tapering to petiole at the base, sparingly, but coarsely, toothed; spikes axillary, shorter than the leaves, consisting of a few dense heads, calyx fleshy. Distribution, New York; habitat, waysides near the sea, rare. Heads greenish, becoming red; August and September.

III. SALICORNIA.

Leafless seaside plants, with the minute flowers sunk in hollows of the succulent, jointed stem; calyx bladder-like, stamens one or two.

1. *S. ambigua* (Samphire). Stem woody, procumbent, creeping and rooting in the sand and among rocks; branches six to ten inches long, fleshy, cylindrical, jointed, erect or ascending, usually nodding; joints tapering at the base, dilated above, with two opposite, blunt teeth; flowers in threes, sunk in opposite pits on the upper joints. Distribution, Turks Island and United States; habitat, sandy seashores and rocks usually below high-water mark, common. Flowers obscure; July to September.

Nat: Ord: 59. Amarantaceæ.

An order of plants closely allied to *Chenopodiaceæ*, but the minute flowers are imperfect and supported by dry membranous bracts, the latter frequently coloured and permanent, for which reason some species are prized in gardens under the name of everlasting flowers. *Amaranthus melancholicus* (Love lies bleeding) is a species which produces beautiful and varied foliage, and dense purple clusters of flowers. *Celosia cristata* (Cock's comb) is a remarkable annual, its flowers form fantastic crimson spikes. A West Indian species of

Alternanthera (*A. polygonoides*) has found a place in the Public Park.

I. AMARANTHUS.

Flowers imperfect, in dense spikes, the stamens and ovary on separate flowers; sepals five, membranous, supported by three outer bracts; stamens three to five; style one, stigmas two or three; seed solitary, smooth, shining, enclosed in membranous case.

1. *A. retroflexus*. An annual, erect plant, stem three to four feet high, reddish, grooved, pubescent; leaves three to four inches long, ovate, pointed, tapering at the base into the long red petiole, strongly veined beneath, margin undulate and tinted with red; spikes green, dense flowered, ovate-oblong, crowded into a dense, pyramidal panicle; bracts awned, twice as long as the acute sepals. Distribution, United States; habitat, cultivated ground, a tall, conspicuous weed. Flowers green, minute; July to October.

There appears to be a second species with cylindrical spikes, but I have been unable as yet to determine it.

Nat: Ord: 60. *Lauraceæ*.

Aromatic trees or shrubs with alternate, simple, dotted leaves; sepals four to six, coloured, slightly united at the base, imbricated; stamens opening by two or four lid-like valves; ovary superior, one-celled, one-seeded.

This order contains the Sweet Bay (*Laurus nobilis*), which is frequently seen in shrubberies; also the much-prized Avocada or Alligator Pear (*Persea gratissima*). A number of these handsome Laurel-like trees are found in Bermuda, but although producing blossoms in profusion, they do not, as a rule, mature their fruit.

Nat: Ord: 61. *Euphorbiaceæ*.

Herbaceous plants, shrubs, or trees, with a milky juice and simple, opposite, or alternate leaves; flowers unisexual, frequently surrounded by conspicuous coloured bracts and often enclosed in a cup-like involucre; calyx inferior, sometimes absent; petals as many as the calyx-lobes or none; male, stamens few or many, distinct or united; female, ovary superior, sessile or stalked; styles two or three, often branched; capsule consisting of two, three, or more one-seeded divisions, which separate when ripe from a central axis.

This order is largely represented in Bermuda, some species being amongst our handsomest ornamental shrubs, while others are worthless weeds. In the former class we must give the first place to the Scarlet Poinsettia, often called Burning Bush (*Poinsettia pulcherrima*), a handsome shrub five to six feet high, the branches terminating in clusters of greenish-red and yellow flowers, surrounded by a whorl of large, leaf-like bracts of the brightest scarlet. The Coral bush (*Jatropha multifida*) is another shrub common in gardens; the leaves are cut almost to the base into seven to nine slender, finger-like,

laciniate segments, the branches terminating in umbels of handsome scarlet flowers, borne on coral-like stalks. *Jatropha pandurifolia* has somewhat similar flowers and fiddle-shaped leaves; it may be seen at Pembroke Hall and other places. *Jatropha Manihot* is the Cassava, the starch of which (Tapioca) is prepared by washing and baking into a favourite article of food. The Cassava is grown from slips, which are planted about January, and take nearly a year to produce the full-sized tubers; it is a smooth shrubby plant, three to four feet high, the leaves being cut nearly to the base into five or seven lanceolate acute, entire segments.

Croton variegatum, *C. discolor*, and some other species, have been introduced on account of their ornamental foliage. A few trees of the Otaheite Walnut (*Aleurites triloba*) are found here and there (e.g., Public Buildings); the leaves are three-lobed, the middle segment largest, and together with the branchlets and long petioles are covered with a mealy down. The Slipper plant (*Pedilanthus tithymaloides*) is common in gardens; the polished rod-like stems and glossy leathery leaves are of an intense dark green, the scarlet involucre of the flower bears a fanciful resemblance (when inverted) to a lady's slipper.

Euphorbia splendens is also a general favourite; the angular thorny stem is prostrate, bearing a few small ovate leaves, the flowering branch is two or three times forked, each division bearing a pair of broad, scarlet bracts, which embrace the minute flowers with their concave base.

The Centipede plant, a leafless species of *Xylophylla*, is frequently grown as a curiosity; the erect stem is cylindrical, but the branchlets are broad, flat, and jointed, bearing dense alternate clusters of small greenish-white flowers at the joints. Other species represented here are the Tallow tree (*Stillingia sebifera*), the Sand-box tree (*Hura crepitans*), Otaheite gooseberry (*Cicca disticha*), and *Euphorbia candelabra*.

I. EUPHORMIA.

Herbs with a milky juice and clusters of imperfect flowers contained in a cup-shaped, four or five-lobed involucre, glands usually alternating with the lobes; male florets several, each consisting of one stamen only with a little bract at base; female floret solitary, central, consisting of a stalked, protruding, three-celled ovary; styles three, bifid; capsule three-seeded, hanging out of the involucre.

1. *E. buxifolia* (Seaside spurge). A small, glaucous, perennial plant, half shrubby at the base; stems spreading and branching, purplish, leafy, about a foot long; stipules between the petioles, triangular, few-toothed, purplish; leaves half-inch long, opposite, shortly petioled, quite entire, ovate, pointed, oblique at the subcordate base, milky green; heads crowded at the end of branches, involucre four-lobed. Distribution, Bahamas and Florida; habitat, seashores, common, probably indigenous. Heads greenish-white; September to December.

2. *E. maculata*. *L.* An annual, prostrate, pubescent plant; stems much branched, radiating and forming patches six inches to a foot in diameter, often purplish; leaves one-third of an inch long, oblong, blunt, oblique at base, obscurely serrate above the middle, ciliate, dark green or purplish above, pale beneath, petioles very short. Heads small, crowded, axillary; capsule hairy, seeds four-angled, transversely wrinkled. Distribution, United States and West Indies; habitat, one of our commonest weeds, spreading out flat on garden paths and flower-beds. Heads reddish-green; all seasons.

3. *E. prostrata*. This species is also found in similar situations to the above, and is so closely allied as to be with difficulty distinguished.

4. *E. hypericifolia*. A smooth, annual, erect plant, one to two feet high; stem twiggy, with alternate slender branches; leaves an inch long, opposite, shortly petioled, oval-oblong, blunt, oblique at the base, serrate, often blotched with red; cymes terminal and axillary, many-flowered, involucre bearing four small petal-like lobes. Distribution, United States, &c.; habitat, cultivated ground, common. Flowers white, minute; summer months.

5. *E. hypericifolia*, var. *hirsuta*. Similar to the above, but the branches and leaves are hairy, the cymes terminal and contracted.

6. *E. heterophylla* (Joseph's coat). A smooth annual plant, two or three feet high; stem erect, branched, sparingly leafy, bright green; leaves alternate, very variable in shape, fiddle-shaped, ovate, lanceolate or linear, serrate or entire, petioled, without stipules, upper leaves and bracts narrowly lanceolate, with a deep red blotch near the base, surrounding the terminal clusters of flowers; involucre five-lobed, bearing a mouth-like gland on one side. Distribution, United States and Bahamas; habitat, waysides and cultivated ground, a common weed of striking appearance. Flowers reddish-green; summer months.

7. *E. populus*. A small, erect, annual, leafy plant about six inches high; stem simple below, dividing into three branches, which are repeatedly forked, forming a regular, leafy umbel; lower leaves alternate, half-inch long, roundish, very blunt, quite entire, tapering into the short petiole, upper leaves (bracts) opposite, at the forks, oblong; involucre small, bearing four two-horned glands. Distribution, Europe; habitat, waste places and cultivated ground, rather local. Flowers green; September to November.

II. MERCURIALIS.

Herbs with a watery juice; flowers unisexual, the male and female frequently on separate plants, not enclosed in involucre; sepals three; male, stamens about twelve, filaments slender; female, ovary two-celled, styles two, forked.

1. *M. annua* (Herb Mercury). Annual, stem erect, smooth, six to twelve inches high, sparingly branched; leaves opposite, thin, two inches long, ovate-lanceolate, acute, regularly serrated, petioled;

male, flower-stalks slender, axillary, terminating in an interrupted spike; female, flowers in axillary clusters. Distribution, England; habitat, waysides, occasional. Flowers green; October to December.

III. RICINUS.

Shrubs with imperfect flowers, in racemes; calyx three to five partite; petals none; stamens united at base, irregularly branched above; capsule three-lobed, three-celled, three-seeded.

1. *R. communis* (Castor Oil Plant). A shrub or small tree ten to fifteen feet high; stem sparingly branched, smooth, often purplish, branches bearing the ring-like scars of fallen stipules; petioles twelve to eighteen inches long, bearing two distant glands near the base and two or four below the leaf; leaves a foot in diameter, attached near the centre to the petiole (peltate), seven to ten lobed, lobes ovate, acute, coarsely toothed, the teeth again finely serrated; flowers in erect panicles six to ten inches long; sepals three, valvate; male, stamens innumerable, irregularly united below; female, styles three, divided almost to base, feathery, capsule prickly. Distribution, East and West Indies; habitat, waste places. Flowers green with purple styles; August to October.

IV. CROTON.

Shrubs, usually clothed with stellate hairs, wool or scales; flowers imperfect, in racemes; calyx five-parted; petals small or none; stamens ten to twenty, not united; capsule three-celled, three-seeded.

1. *C. maritima*. A small seaside shrub, two to three feet high; branches slender, straggling, clothed with brownish-white woolly down; leaves petioled, alternate, one to two inches long, ovate, entire, pale above, silvery beneath; spikes terminal or in the forks, many-flowered; calyx five-partite; male, stamens twelve; female, styles three, much branched; capsule woolly. Distribution, Southern United States; habitat, sandy bays, Somerset and Paget. Flowers whitish.

V. PHILLANTHUS.

Shrubby plants with entire leaves and imperfect flowers; calyx five-partite; male, stamens three, united; female, styles three, bifid; fruit three-celled, cells two-seeded.

1. *P. Miruri*. An erect annual plant, one-half to two feet high, somewhat shrubby at base; stem smooth, sparingly branched, giving off alternate leafy branchlets, two to four inches long, which bear about forty alternate leaves, arranged in two rows; leaves oblong, entire, blunt, oblique at base, pale beneath, one-third of an inch long; stipules bristle-shaped in pairs; flowers solitary or in pairs in each axil, much shorter than the leaf; capsule green, minute globose. Distribution, West Indies; habitat, cultivated ground, frequent. A singular Mimosa-like plant, the leaves are sensitive and close at sundown. Flowers green, hidden beneath the leaves; August to November.

Nat : Ord : 62. *Urticaceæ*.

Herbaceous plants, shrubs or trees; flowers imperfect; calyx regular, inferior, four-lobed; petals none; male, stamens four, opposite to lobes of calyx; female, ovary one-celled, one-seeded, styles one or two.

Sub-order *Urticæ*.—Plants with a watery juice; stamens expanding with elasticity when mature.

I. URTICA.

Herbs with stinging hairs and opposite leaves; flowers unisexual in axillary or terminal racemes; male, calyx four-partite, stamens four; female, calyx four-partite, the two inner lobes much larger and enclosing the one-seeded nutlet.

1. *U. urens* (Stinging Nettle). An annual plant, all parts bristling with irritating stings; stem erect, branched, a foot or eighteen inches high; leaves one to two inches long, petioled, broadly ovate, rounded at the base, coarsely and sharply serrated; flowers in dense, almost simple, axillary clusters, shorter than the leaves. Distribution, Britain, introduced North America; habitat, cultivated ground and waysides. Flowers minute, green; December to March.

2. *U. dioica* (Stinging Nettle). Perennial, all parts armed with stinging hairs; stem erect, two to three feet high, sparingly branched, bluntly four-angled; leaves heart-shaped, ovate, coarsely and sharply serrate, point acute, entire; racemes branched, axillary, in pairs. Distribution, Britain, introduced North America; habitat, waysides and waste places. Flowers as in former species.

II. PARIETARIA.

Herbs without stinging hairs and with alternate leaves; stamens and ovary on the same or on separate flowers; flowers in small axillary clusters, surrounded by leafy bracts; sepals four, stamens four, stigma a subsessile hairy tuft; fruit small, seed-like.

1. *P. debilis*, var. *floridana* (Red Pellitory). Decumbent and woody at the base; stems erect, simple, downy, reddish, six to twelve inches high; leaves entire, ovate-lanceolate, inch and a half long and five-eighths of an inch wide, tapering at the base, pointed, rough with minute points on the upper, glossy, dark-green surface, petioles half-inch long; clusters about three-flowered; bracts ovate, hairy, a little shorter than the membranous, four-cleft calyx. Distribution, Southern United States; habitat, damp rocky waysides and walls. Flowers greenish-white, stigma red; September to March.

2. *P.* (species ?) White Pellitory. Decumbent and woody at the base; stems ascending, branched, white and translucent; leaves broadly ovate, cordate or rounded at the base, long pointed, obscurely crenulate, pellucid dotted, thin, very variable in size, one-half to two inches long and the same in width; clusters few-flow-

ered; bracts slender, three-nerved, longer than the leafy, four-cleft calyx; nutlet ovate, shining. Habitat, rocky waysides and old walls, together with the previous species generally distributed through the Islands. Flowers greenish with white anthers; September to March.

III. PILEA.

Herb destitute of stinging hairs; leaves opposite; flowers imperfect, in axillary clusters; calyx three-parted, one lobe larger and inflated below the top; stamens three.

1. *P. Microphylla* (var. ?). A small, perennial, Moss-like plant with slender diffuse stems, two to three inches long; leaves in unequal pairs, larger one-sixth of an inch long, oval, honeycombed beneath, bearing narrow transverse raphides on the upper surface; flowers very minute, in sessile axillary clusters, much shorter than the leaves. Distribution, West Indies; habitat, old walls near Salt-kettle. Flowers pink; October.

A larger and more succulent variety of the above (*Pilea microphylla*, var. *scorpyllifolia*), called the *Lace plant*, has found its way into almost all gardens as a border for flower beds; it has fleshy spreading stems, bearing innumerable pairs of leaves of unequal size, the larger being a third of an inch in length. The mimic force with which the stamens explode when mature and eject the dust-like pollen has also gained for this species the name of *Artillery plant*.

IV. BOHMERIA.

Herb destitute of stinging hairs; leaves opposite; flowers in spikes, calyx four-parted, stamens four.

1. *B. cylindrica* (False Nettle). A smooth, erect, herbaceous plant; stem square, two to three feet high; leaves ovate, three to six inches long, rounded at the base, coarsely toothed, slender pointed, on long petioles; spikes axillary, shorter than the leaves, male interrupted, female cylindrical. Distribution, West Indies and America; habitat, Pembroke marshes. Flowers minute, greenish; July.

Sub-order Moreæ.—*Trees or shrubs with a milky juice; flowers unisexual, in dense heads or spikes; fruit formed of a dense cluster of small, one-celled, one-seeded berries.*

V. MORUS.

1. *M. rubra* (Mulberry). An erect, much branched tree, twenty to twenty-five feet high, with a rugged bark; leaves cordate, ovate, rarely lobed, five to eight inches long, three to five inches wide, regularly serrate, pointed; stipules membranous, ovate; male spike an inch in length; fruit oblong, dark red, juicy. Habitat, hedges and thickets, not uncommon, also planted as a shade around houses, but no attention appears to be paid to the cultivation of this fruit, which thrives well in sheltered situations. Other species, as *M. multicaulis* (the Chinese Mulberry), and *M. macrophylla*, may be seen

occasionally (e.g., Prospect), and were originally introduced with a view to the rearing of silkworms.

The India-rubber tree (*Ficus elastica*), which belongs to this order, is not uncommon, and the splendid specimen at "Par le Ville" is one of the sights of Hamilton. The Fig (*Ficus carica*) is rarely met with out of cultivation, but is frequently seen planted in sheltered situations. The Jack fruit (*Artocarpus integrifolia*), a variety of the bread-fruit, and the Osage orange (*Machura aurantiaca*), have been introduced locally.

Sub-order Ulmæ.—Trees with a watery juice and alternate leaves; flowers often perfect; calyx five-parted, bearing five erect stamens; styles two; fruit a drupe.

I. SPONIA.

1. *S. Lamarkiana*. A rough, irregular shrub or small tree with spreading branches; leaves about an inch long, ovate-lanceolate, serrate, equal at the base, rough above, hoary beneath; flowers small in nearly sessile, axillary clusters; drupe minute. Distribution, Bahamas; habitat, Walsingham and Paynters Vale. Flowers inconspicuous; June.

The Nettle or Cherry tree (*Celtis occidentalis*) may also be seen at Walsingham and elsewhere; it is an Elm-like tree, with slender spreading branches and ovate, pointed, serrated leaves, which are very oblique at the entire base, the fruit is dark red about the size of a pea.

The following trees, which belong to various Apetalous orders, are also met with occasionally:—

The Plane tree (*Platanus occidentalis*). A few of these tall handsome trees are growing near Spanish Point; the leaves are five-angled and sharply toothed, the flowers are destitute of both calyx and corolla, and are gathered into dense rough heads or balls, which remain suspended from the branches on long stalks.

The Weeping Willow (*Salix babalonica*) was introduced in 1832 by Lady Turner; it may frequently be seen in moist situations. The graceful, yet mournful, appearance of this tree, with its slender drooping branches and leaves, is too well known to require minute description. Humboldt's Willow (*Salix Humboldtiana*), a small evergreen species, with erect branches, is occasionally met with in shrubberies.

The White Poplar (*Populus albus*) is said to grow at Camden, and the Black Oak (*Quercus niger*) at Richmond.

The Horse-tail tree, or South Sea Ironwood (*Casuarina equisetifolia*), a tall leafless tree with slender jointed branchlets, is growing in the garden of the Captain-in-charge, Ireland Island.

Nat: Ord: 63. *Myricaceæ*.

Fragrant shrubs with simple alternate leaves dotted beneath with minute resinous glands; flowers in small unisexual catkins, desti-

tute of both calyx and corolla; male cylindrical, stamens four to six; female ovoid, ovaries one-celled with several scales at the base, stigmas two; drupe one-seeded, covered with wax.

I. MYRICA.

1. *M. cerifera* (Bayberry). An erect, bushy shrub, three to six feet high, with many rough leafy branches; leaves dry and withered-looking, brownish beneath with minute dots, oblong, wedge-shaped, gradually narrowing to the short petiole, entire or with a few teeth towards the acute point, two to three inches long and one-half to three-quarters of an inch wide; berries, in dense clusters, half the size of a pea, granular and coated with white fragrant wax, which is used in the United States for making candles. Habitat, Devonshire marshes, Hamilton to Prospect, very common, but suffers from blight. Catkins brown; May to July.

Nat : Ord : 64. *Piperaceæ*.

Herbs with jointed stems and opposite or alternate leaves, stipules none; flowers perfect in spikes, calyx and corolla absent, but each flower arising from the axil of a bract or scale, stamens two, ovary one-celled, forming a one-seeded berry, stigma minute.

I. PIPER.

1. *P. obtusifolia* (Wild Pepper). A smooth, fleshy, perennial plant; stems prostrate, ascending at the flowering ends; leaves alternate, fleshy, shining, broadly obovate, tapering into the channelled petiole, two and a half inches long and one and a half inches broad; spikes in pairs or threes, three to five inches long, curved. Distribution, West Indies; habitat, woods near all caves, common. Spikes green.

CLASS II.—MONOCOTYLEDONS.

Stem with the woody fibre mingled with the pith, bark not separable; leaves usually sheathing at the base, the veins parallel; divisions of the flower (*perianth*) three or six in one or two whorls; embryo with only one seed-leaf.

Nat : Ord : 65. *Palmaceæ*.

Trees or shrubs with simple unbranched stems; leaves large, usually in terminal clusters; flowers unisexual, arranged on a branched fleshy stem (spadix), usually enveloped in a large membranous sheath (spathe); perianth in two whorls, each consisting of three scaly leaves; stamens six; ovary usually three-celled; fruit one to three seeded, hard or fleshy.

Although a large number of Palms have, at various times, been introduced into Bermuda, only one species appears to be indigenous; of the former the Cabbage Palm (*Orodoxa oleracea*), formerly called *Areca oleracea*, is certainly the most handsome. The splendid trees

at Pembroke Hall invariably attract attention ; their stems rise like granite columns to a height of fifty or sixty feet and terminate in a graceful, feather-like plume : the terminal bud is eaten in the West Indies. The Cocoa-nut palms (*Cocos nucifera*) are usually to be seen in scanty groups of two or three, their less graceful stems rising up gaunt, bare and irregular above the marshy undershrub or near some country cottage. The Gru-gru palm (*Astrocaryum aureum*), a prickly shrub, with golden down beneath the leaves, may be seen in shrubberies, notably at Mount Langton and Pembroke Hall, where the Catechu palm (*Areca Catechu*), a South Sea Island species called *Pritchardia Pacifica*, the Date palm (*Phoenix dactylifera*), *Martinesia caryotefolia*, *Rhapis flabelliformis*, and a species of Palmetto (*Chamaerops fortunei*), may be seen ; but as these palms do not appear to mature their fruit in this latitude, they have not increased beyond those plants originally introduced.

I. SABAL.

1. *S. umbraculifera* (Palmetto). Stem stout, erect, cylindrical, eight to ten feet high, rough with longitudinal cracks and with the ring-like scars of fallen leaves ; leaves densely crowded at the summit, petioles four to five feet long, not spiny, split at the sheathing base, blade of leaf smooth, fan-shaped, four to four and a half feet long and rather more in width, cut to the middle into about fifty slender, bifid segments, with loose fibres hanging between ; spadix axillary, much branched, half as long as the leaves, flowers sessile, the three inner leaves of perianth three times longer than the outer ; berries greenish-black, shining, globose, depressed, one-third of an inch in diameter. Distribution, Bahamas, where it appears to grow much higher ; habitat, generally distributed throughout the Islands. Flowers white ; August and September.

This Palm varies much in appearance according to the conditions of soil, &c., under which it is grown : in marshes it is stout and vigorous, while occasionally some old solitary tree may be seen rising to a height of twenty or thirty feet ; on dry rocky hills, however, it becomes much dwarfed, and looks like a distinct species, — these, however, rarely appear to produce fruit, and at the base of the hills merge into the more ample form.

The Palmetto was of the greatest use to the early colonists ; its leaves furnished them with hats and a thatch for their houses ; from the sap, drawn from the trunk and fermented, a beverage was obtained ; while the seeds, ground and mixed with meal, were baked into a coarse bread ; later on, occupation was found for busy fingers in weaving the leaves into baskets in which onions were shipped to New York ; — but with the improvements of recent years this has all passed away, and with the exception of a few fans, made from the bleached leaves, no use is made of this once indispensable palm.

Closely allied to the above is the Natural Order *Pandanaceæ*, which produces the graceful Fan palm (*Cardulovica palmata*), and two species of Screw palm (*Pandanus muricatus* and *P. odoratus*), so called from the spiral manner in which their leaves are given off around the stem ; they frequently find a place in shrubberies.

The Natural Order *Araceæ* is distinguished from *Palmaceæ* by not having its flowers surrounded by a perianth, but crowded on a fleshy, unbranched spadix, and enveloped in a large, frequently-coloured spathe.

The common white Arum (*Calla Æthiopica*), frequently, but wrongly, called a Lily, is a fair representative of the order; the imperfect flowers are clustered around the hidden base of the spadix, which rises as a yellow cylindrical rod, around which the large milk-white spathe is loosely rolled in the form of a funnel. A singular species, with a purplish-black spathe, was brought from Palestine by Mr. Reid and cultivated at Pembroke Hall, where it attracted much attention.

The Bleeding-heart (*Caladium bicolor*) is more frequently seen as a window plant; the heart-shaped leaves are blood-red in the centre. Other species with variously spotted leaves are also common.

The Eddoe or Coco (*Colocasia esculenta*) is occasionally cultivated in marshy ground for the sake of its edible tubers; it is a stemless plant with fleshy petioles and large heart-shaped leaves.

The Duck-weed (*Lemna minor*), which forms a green layer, floating on stagnant pools, belongs to the closely-allied order of *Lemnaceæ*; it has no distinguishable stem and leaf, but consists of an oval, leaf-like frond, from the under surface of which roots hang down into the water, and which bears the minute flowers in a cleft in its margin.

The West India Yam (*Dioscorea sativa*) has been locally introduced, but is not cultivated as an article of food.

The true Sarsaparilla is commonly supposed to be plentiful in Bermuda, and to be endowed with special virtues; the plant, however, which is grown, used, and sold under that name is in no way related to the *Smilax*, but invariably consists of the stem, leaves and fruit of the Virginian Creeper (*Ampelopsis quinquefolia*). How such an error originated I cannot tell, as the vines are very dissimilar, and the true *Smilax* has entire heart-shaped leaves. I understand that the latter is to be seen growing at Camden.

Nat: Ord: 66. *Typhaceæ*.

Tall aquatic plants with narrow, entire leaves; flowers without a perianth, but with a few scales at base arranged in dense cylindrical heads or spikes; stamens with long, slender, united filaments; ovary one-seeded.

I. *TYPHA*.

1. *T. angustifolia* (Cat-tail). Stem slender, erect, three to five feet high, leafy at the base; leaves erect, three feet long, about half an inch wide; spikes cylindrical, terminal, the upper portion consisting of stamens only, and a little separated from the lower female portion. Distribution, Europe and North America; habitat, ponds, common. The brown furry spikes are produced in June.

Nat : Ord : 67. *Liliaceæ*.

Herbaceous plants arising from a bulb or tuber; leaves sessile, or with a leafy petiole, sheathing at the base, parallel veined; flowers perfect, regular; the perianth six-parted, usually white or red; stamens six, inserted on the perianth, anthers opening towards the centre of the flower; style simple; ovary superior, three-celled; fruit a capsule or berry, with one or more seeds in each cell.

The most important plant in this order is the Onion (*Allium cepa*), on the successful raising of which the prosperity of the Bermudian planter, to a large extent, depends. The exports for 1883 amounted to 300,000 boxes, each containing 50 lbs. weight, and representing a total value of £50,000. The seed is planted in September or October, and the bulbs mature in April.

Asparagus is occasionally cultivated with some success.

This order, however, is more generally noted for the beauty of its flowers than for its edible products.

The Easter Lily (*Lilium longiflorum*), a dwarf species, which bears numerous large flowers of purest white, is becoming yearly more largely appreciated; climatic influence, with a careful selection of bulbs, appears to have produced a permanent variety peculiar to these Islands.

Other species frequently cultivated are, *Lilium candidum*, which bears a raceme of white flowers on a stout leafy stem three to four feet high; the red Japanese Lily (*L. speciosum*), and the Scarlet Martagon (*L. chalcedonicum*).

The Blue Lily (*Agapanthus umbellatus*) bears an umbel of numerous deep blue flowers, crowning a naked stem about two feet high.

The Star of Bethlehem (a species of *Ornithogallum*) produces long racemes of numerous small greenish-white flowers before the leaves appear.

Two or three species of *Dracaena*, shrubs with erect woody stems, may be seen in the Public Park and other gardens, where their dark crimson or variegated foliage affords a pleasing contrast with other vegetation.

The Bowstring Hemp (*Sansevieria Guineensis*, and a few Hyacinths, with the Aloes mentioned below, complete the garden plants of this popular order.

I. YUCCA.

Woody plants with simple leaves, crowded at the top of stem; flowers large in terminal panicles; perianth six-leaved, regular, persistent; stamens six, inserted in base of perianth; capsule fleshy, six-celled, many-seeded.

1. *Y. aloifolia* (Spanish Bayonet). Perennial, stem cylindrical, woody, four to six feet high, leaves spear-shaped, thickly clustered at the summit, at length deflexed, rigid, a foot or more in length, an inch broad, margin rough, point slender, bearing a dark woody

spine; panicle erect, many-flowered, flowers nodding; lobes of perianth oblong, pointed; stamens included; capsule four inches long, with three wide grooves; seeds black. Distribution, Jamaica and Florida; habitat, thickets and sandy bays, sometimes planted as a fence, a formidable plant with dagger-like leaves which turn everyway. Flowers two inches long, white with purple base; June to August.

II. ALOE.

Succulent plants with simple, often spiny, leaves; flowers in racemes; perianth tubular, with six short spreading lobes; stamens hypogynous; capsule three-celled, many-seeded.

1. *A. vulgaris* (Aloe). Stem very short, throwing up suckers from the base; leaves about a foot long, lanceolate, acute, curved upwards, very thick and glutinous, armed with spiny teeth; raceme erect, branched, two to three feet high, flowers nodding, yellow. Distribution, largely cultivated in the West Indies—said to have been introduced there from Bermuda or Canary Islands (*Grisbach*); habitat, sandy waste places, and also cultivated in gardens together with some ornamental species with variegated or mottled leaves, *Aloe variegata*, *A. picta*, and the yellow-spined *A. xanthacantha*.

Nat: Ord: 68. *Amaryllidaceæ*.

Herbaceous plants, often arising from a bulb; leaves narrow; flowers showy, regular, six-lobed, frequently furnished with an inner cup or crown; stamens six, sometimes united at the base; ovary inferior, three-lobed; fruit a three-celled capsule, cells one or many seeded.

An order of Lily-like plants, readily distinguished from the previous order by the inferior ovary.

Amongst the species most commonly found in gardens are: the Giant Lily (*Crinum cruentum*), the leaves of which are three to four feet long, and five to six inches wide, the flowering stem rises three or four feet, and bears a cluster of large reddish flowers, from which the dark-red bracts hang in slender tresses. The Barbadoes Lily (*Amaryllis equestris*) has narrow oblong leaves, the erect flowering stem bears at its summit two or three large, nodding, vermilion-coloured flowers. The Guernsey Lily (*Nerine sarniensis*) is another general favourite, shortly before the leaves appear the slender flowering stem rises from the earth about a foot in height and then simultaneously unfolds a ray of eight or ten gold-besprinkled flowers with wavy lobes.

The Atamasco Lily (*Zephyranthes atamasco*) bears a solitary erect flower about three inches long, which arises with the leaves from the bulb: both the white and pink varieties are cultivated.

Two smaller species of *Zephyranthus*, viz., *Z. tubispatha* and *Z. rosea*, the former with greenish-white, and the latter with red solitary flowers, about an inch and a half in length, are very common in gardens and are not uncommonly met with as escapes; the narrow,

grass-like leaves are about six inches long, and the erect flowering stems equal them in length.

In the genus *Narcissus* a cup-shaped crown arises from the throat of the perianth, the six stamens being inserted within the cup. *Narcissus Tazetta* and *N. jonquilla* are both common in the spring months; the former bears a cluster of numerous white flowers with a yellow cup, and the latter one to three deep yellow fragrant flowers.

I. PANCRACTIUM.

Herbaceous plants, leaves arising from a bulb; perianth regular, six-parted; stamens six, their filaments united by a membranous web into a funnel-shaped crown.

1. *P. maritima*. Leaves strap-shaped, smooth, leathery, eighteen inches long, five-eighths of an inch wide; flowering stem shorter than the leaves, terminating in a many-flowered umbel; perianth funnel-shaped, with narrow spreading lobes; crown adhering to the perianth, membranous, twelve-toothed, stamens arising from between each pair of teeth, anthers slender, attached by their centre. Distribution, Southern United States; habitat, near Watford bridge, plentiful. Flowers four to six inches long, white, fragrant; July to September.

2. *P. ovatum* (Spider Lily). A much larger species than the above, leaves oval, two feet long and three inches wide; flowering stem stout, erect, two feet high; umbel many-flowered; perianth with a long, narrow tube, the limb divided into six slender segments with wavy margins; the long stamens are united near the base into a funnel-shaped cup. Established along north shore Somerset and elsewhere; the large attenuated white flowers are also conspicuous in gardens from July to September.

II. AGAVE.

Large Aloe-like plants, with the fleshy leaves clustered around the base of the stem, from the centre of which the erect flowering stem arises; perianth six-parted, tubular at the base; stamens six, protruding; capsule leathery, three-celled, many-seeded.

1. *A. Americana* (American Aloe, Bamboo). Stem short; leaves three to six feet long, lanceolate, smooth, fleshy at the base, leathery above, with curved, spiny teeth, and more or less spinescent point; flowering stem rising fifteen to twenty-five feet, giving off alternate branches and forming a pyramid-shaped panicle, on the divisions of which the innumerable flowers are clustered; tube of perianth contracted in middle. Distribution, tropical America; habitat, waste places, hedges and thickets, sometimes planted as a fence. Flowers two inches long, greenish-yellow; formerly supposed not to flower until one hundred years old.

A variegated variety of the above, the leaves of which have a broad yellow margin, is frequently planted as a garden shrub.

Nat : Ord : 69. *Orchidaceæ*.

The plants which form this order are readily distinguished by the peculiar structure of their flowers ; the three outer lobes of the perianth (sepals) are nearly equal and coloured ; of the three inner lobes (petals), the two upper are regular, while the lower, called the lip, is usually larger and variously shaped, frequently spurred at the base and causing the flower to assume a resemblance to various insects ; the stamens (one or two) are united with the style into a solid column opposite to the lip ; the pollen either coheres into waxy masses or powdery ; ovary twisted.

This order contains in the West Indies more than two hundred species, many of which attach themselves to the bark of trees and draw the greater part of their nutriment from the air ; in some the flowers are very brilliant and assume grotesque forms. Many of these have been brought to Bermuda at various times and lodged in conservatories at Clarence Hill and elsewhere, but they appear unable to make themselves at home in these Islands. One species only is found native.

I. SPIRANTHUS.

Flowers spirally twisted around the stem ; upper sepal uniting with the petals to form a tube ; lip oblong, embracing and adhering to base of column.

1. *S. tortilis* ? Stem slender, erect, one to two feet high ; leaves narrow, six to eight inches long ; stem leaves small, tubular, scale-like ; flowers small, in one row spirally twisted, in a terminal spike two to three inches long. Distribution, West Indies and Southern United States ; habitat, Pembroke marshes ; April and May. Flowers white, one-third of an inch in diameter.

Nat : Ord : 70. *Commelynaceæ*.

Herbaceous plants, with entire sheathing leaves ; perianth in two distinct whorls, each three-leaved, outer small, sepal-like, inner larger, petal-like ; stamens six, some of them usually deformed, inserted under ovary, the latter superior, two or three celled, cells few-seeded.

The blue Spider-wort (*Tradescantia Virginica*) and the Oyster plant (*T. discolor*) are found in gardens, the latter frequently ; its leaves are about a foot long and purple beneath, the clusters of delicate white flowers are contained in half-closed purple cups, which are crowded and compressed between the bases of the leaves. *Cyanotis discolor*, a prostrate plant with ovate, ribbon-like leaves, purple beneath, is also found in windows and flower-beds.

I. COMMELYNA.

Grass-like plants with slender, watery stems ; flowers contained in folded, leaf-like bracts ; stamens six, three fertile and three bearing abortive anthers,

1. *C. agraria* (Poultry-grass). Stems smooth, prostrate, rooting at the brittle joints, much branched and interwoven, several feet in length; leaves ovate or oblong-lanceolate, one and a half to two and a half inches long, sheath ciliate; bracts one inch long, cordate, ovate, pointed, bearing three or four flowers, on slender branched stalks; sepals pale, membranous; petals roundish, the two upper clawed and rather larger than the lower sessile one. Distribution, West Indies and Southern United States; habitat, cultivated ground, a most troublesome weed throughout the Islands. Flowers bright blue, half-inch in diameter; summer months.

2. *C. elegans*. Stems ascending about a foot long; leaves lanceolate, acute, bearing small ciliated auricles at the base, sheath rusty, pubescent; bract triangular, acute, margins of the base united, forming a cup which contains a mucilaginous fluid; sepals very delicate, upper smaller; two upper petals wing-like, on long claws, lower reduced to a minute scale; anthers very dissimilar. Distribution, Jamaica; habitat, cultivated ground. Flowers very pretty, bright blue with yellow stamens, an inch in diameter; summer months, early morning only.

Nat : Ord : 71. *Marantaceæ*.

Herbaceous plants with tuberous roots; leaves large, with parallel veins from midrib to margin; flowers arising from membranous bracts; perianth very irregular in three series; stamens three, petal-like, two barren, the fertile one two-lobed and bearing half an anther on one of the lobes; ovary inferior, one to three celled.

This order is noted for the purity of the starch contained in its root-like rhizomes; that which is obtained, under the name of Arrowroot, from *Maranta arundinacea* has given to Bermuda a world-wide reputation.

Arrowroot seems to grow best in deep red soil, but even that appears soon to become exhausted by it. Portions of the rhizomes are planted in April or are left behind from the former crop for that purpose; the stem is erect and branched, rising three or four feet high, bearing large, ovate-lanceolate, entire leaves; the white flowers appear in pairs about September, and the crop is ready in February. A large quantity of water is necessary to wash the starch, and the smaller planters who manufacture their own arrowroot have occasionally to leave the crop standing until the necessary amount of rain falls; should second growth commence the starch deteriorates, which causes heavy loss. The tubers are first washed and scraped, then rasped against a revolving grater, passed through sieves to separate the fibre, and the starch cleansed by repeated washing and decantation; finally the moisture is pressed out and the snow-white cake broken up and dried in the sun. Great care and cleanliness are necessary in its production, and passing showers have to be closely watched for during the drying stage.

The largest manufactory is at Camden, near Hamilton, where steam power is used; but the appliances at St. David's Island are of a most primitive description.

I. CANNA.

Sepals three, persistent, on summit of ovary; petals six, narrow, unequal; stamens three, petal-like, one bearing a long, narrow anther cell, which adheres by half its length; another (the cup) frequently recurved.

1. *C. coccinea* (Cane Shot). Stem erect, leafy, three to five feet high; leaves about ten inches long and four wide, sheathing at the base, with prominent parallel veins, ovate-oblong, slender pointed, smooth, quite entire; racemes terminal, enclosed in spathe-like bracts; petals strap-shaped, the lip reflexed, emarginate; capsule rough, prickly, three-celled, cells about three-seeded; seeds round, black, shining. Distribution, West Indies; habitat, waste places and in gardens. Flowers two inches long, red, the lip variegated with yellow; August to October.

Canna edulis, from the tubers of which an inferior kind of Arrow-root is manufactured in some countries, is here often cultivated as an ornamental garden plant; it resembles the former in general, but the flowers are entirely red. A variety of the latter, with purple stained leaves and stem (*C. discolor*), is occasionally seen. *C. glauca*, which is met with both in gardens and as an escape, has entirely yellow flowers and its foliage has a whitish appearance.

Nat : Ord : 72. *Juncaceæ*.

Grass-like plants with slender leaves and withered-looking flowers; perianth scaly, six-parted, in two series, persistent, regular; stamens six, arising from beneath the ovary; styles three; capsule three-celled, seeds very numerous.

I. JUNCUS.

1. *J. tenuis* (Rush). Perennial, stem slender, wiry, erect, six to eighteen inches high, leafy at the base only; leaves narrow, nearly as long as the stem; flowers single, distant, nearly sessile along one side of the unequal divisions of a terminal panicle, supported by one to three leaf-like bracts; sepals lanceolate, exceeding the ovoid capsule. Distribution, United States and Jamaica; habitat, marshes. Flowers greenish.

Nat : Ord : 73. *Musaceæ*.

Tree-like plants with simple stems formed by the sheathing petioles of the large entire leaves; flowers in clusters (hands) in the axils of large deciduous bracts, alternating along a woody spadix; perianth superior, unequal, in two series of three leaves each; stamens six, some always abortive; ovary inferior, three-celled, many-seeded.

The Banana and Plantain are cultivated in Bermuda, as in all warm countries, and their graceful palm-like appearance adds not a little to the tropical aspect of the Islands. The variety most frequently grown is the Dwarf Banana (*Musa Cavendishii*), which

thrives well and bears heavy bunches of choice fruit, probably owing to the trees being more easily sheltered from the severe gales which sweep over the Islands and blow the exposed, parallel-veined leaves of taller varieties to shreds. The common Banana (*Musa sapientum*), the red Banana (*M. rosaceum*), Fig Banana (*M. spicatum*), and the Plantain (*M. paradisiaca*), are also cultivated, but the bunches are usually only half filled with small fruit.

Nat : Ord : 74. *Iridaceæ*.

Herbaceous plants; leaves closely compressed at the sheathing base in two opposite ranks, usually sword-shaped; perianth superior, six-parted, in two whorls; stamens three; stigmas three, sometimes petal-like; capsule three-celled, many-seeded.

The purple Iris (*Iris Germanica*), with large purple flowers, and a Cape bulb (*Antholyza Æthiopica*), which bears a tall raceme of two-lipped, orange-coloured flowers, are very frequently seen in gardens. The Gladiolus or Corn-flag is more rarely met with.

I. SISYRINCHIUM.

Herbs with fibrous roots, grass-like leaves, and united stamens.

1. *S. Bermudianum* (Bermuda Iris). Leaves six to ten inches long and quarter-inch wide, sword-shaped; flowering stem eight inches to a foot high, erect, winged, branched and jointed above, bearing compressed leafy bracts at each division; flowers in clusters of three to six, on slender stalks, arising from a pair of unequal spathe-like bracts; lobes of perianth flat, oblong, bearing a minute point at the broad, blunt apex, three outer (sepals) rather broader; stamens forming a slender tube around the style; capsule globose. Distribution, United States and Canada; habitat, waste places, barren hills and islets, very common, indigenous. Flowers half an inch in diameter, purplish with yellow centre; April and May.

Nat : Ord : 75. *Graminaceæ*.

Grasses, sometimes rising to a considerable height; stems hollow, between the solid, jointed nodes; leaves alternate, sheathing at the base, sheath-split usually bearing a membranous ligule at its junction with the blade; flowers arranged in little spikelets, consisting of one or more alternate florets, enclosed by scaly bracts; two outer bracts at base of spikelet are called glumes; each separate floret consists of an unequal pair of bracts called paleæ and two or three minute scales arising from the base of ovary; stamens two or three, hypogynous, anthers attached by their centre; styles two; fruit a seed-like grain.

The flowers of grasses are usually so minute that a pocket-lens is necessary to properly examine their construction.

The most useful member of the order is the Indian Corn (*Zea Mays*), which has been largely cultivated ever since the Islands were first settled, during the summer months, both for fodder and for the sake of the green ears of corn, which are used as a vegetable.

This handsome grass rises to a height of five or six feet, the leaves are somewhat broad and two to three feet long; the male flowers form a graceful terminal panicle, while the female are partly immersed in the substance of a thick, woody, axillary spike (the cob), which is enclosed in tough, spathe-like bracts.

The Guinea Corn (*Sorghum vulgare*) is also cultivated, but more rarely; the large, compact, oval panicle is divided into slender, erect branchlets, which bear the long-awned spikelets. This species, in common with the closely-allied Chinese Sugar Cane (*Sorghum saccharatum*), are chiefly grown as food for cattle.

The Sugar Cane (*Saccharum officinarum*) is planted occasionally in marshy ground: the stem, cut into short lengths, is much prized by the juvenile native population.

A little Barley and Oats are cultivated, the latter being frequently turned in to prepare the ground for potatoes.

Ornamental grasses are few in number. A clump of Pampas-grass (*Gynerium Argenteum*) is conspicuous on the lawn at Clarence Hill; it is, however, but a dwarf compared with its congeners in South America, where they rival the Bamboo in height. The Bamboo itself (*Bambusa arundinacea*) is seen occasionally in quiet sheltered corners, raising its rod-like, jointed stems thirty or forty feet high; the slender branches are solid and bear narrow lanceolate leaves about six inches long. Its more humble relation, the Cane (*Arundo Donax*), is planted in clusters near country cottages; the slender stem rises ten to fifteen feet, terminating in a large tawny panicle, which, like a graceful plume, sways with every passing breeze.

Very different to these giants of tropical vegetation is the Quaking-grass (*Brixa maxima*), which is grown in the flower-beds, and when transferred to vases graces the interior of the cottages; the loose panicle rises about a foot in height, and bears large, heart-shaped spikelets, which hang tremulous from its slender branchlets. The Canary grass (*Phalaris canariensis*) is grown to furnish seed for cage-birds; and the Lemon grass (*Andropogon schenanthus*), which has a very agreeable smell, is said to be used by the natives in the treatment of fevers.

A. Spikelets sunk into pits or hollows on one side of a broad woody spike.

I. STENOTAPHRUM.

1. *S. Americanum* (Crab-grass). A perennial smooth grass; stem several feet in length, stout, creeping, with short joints; leaves in opposite ranks, two to four inches long, blunt, flat, sheath much compressed; spike three inches long, quarter-inch broad, flat compressed, bearing the distant spikelets in two rows on the convex under surface; florets leathery, lanceolate, acute. Distribution, West Indies and Southern United States; habitat, everywhere, one of the commonest and most valuable native grasses, very sweet and much sought after by cattle.

B. *Spikelets sessile, few-flowered, distinct on one side of unbranched solitary or digitate spikes.*

II. CHLORIS.

Spikes digitate; spikelets in two rows, containing both male and perfect florets.

1. *C. petracea* (Bed-grass). Smooth; leafy and prostrate at the base, the slender, compressed flowering stem erect, ten to twelve inches high; leaves about two inches long, blunt, flat, sheath compressed; spikes two to five, slender, erect, an inch and a half long, finely serrated along the back; glumes emarginate, shortly awned, perfect florets ovate. Distribution, Jamaica, etc.; habitat, dry limestone hills and waysides, a common native grass; the yellowish glumes are very persistent, and remain conspicuous long after the black grains have fallen. November.

III. CYNODON.

Spikelets awnless, one-flowered, arranged in a single row on the under side of slender, digitate spikes.

1. *C. Dactylon* (Bermuda grass). A smooth perennial grass; stem creeping at the base and forming large patches, rising in flower four to six inches; leaves three to four inches long, half-inch wide, hairy on margin, sheath compressed; spikes two to five, slender, spreading, two inches long, the spikelets closely applied to the slender three-nerved axis; glumes three-nerved; anthers purple. Distribution, Bahamas and United States; habitat, generally distributed throughout the Islands, easily distinguished from the surrounding grasses by its glossy, dark green leaves; summer months.

IV. PASPALUM.

Spikelets one-flowered, usually rounded and closely arranged in two or four rows on the under side of the slender, digitate spikes; glumes two-membraneous, equal, closely pressed to the leathery, awnless flower; styles feathery, and together with the anthers, deep purple.

1. *P. filiforme* (Wire-grass). Perennial, forming long, wiry and knotted, underground stems, flowering stem slender, erect, half to one foot high; leaves very slender, one to three inches long, sheaths slightly compressed, hairy; spikes two to five, approximate, spreading, about an inch and a half long; spikelets in two rows, ovate, pointed, closely applied to the slender axis, which is rounded and smooth on the upper surface. Distribution, West Indies; habitat, common everywhere, a most troublesome grass to eradicate and a great pest to the farmer.

2. *P. distichum*, L. vel. *P. littorale*. A perennial seaside grass; stems stout, fleshy, compressed, creeping, sometimes forming coarse leafy tufts and rising one to two feet high; leaves two to four inches long, folded together, rarely flat, obscurely jointed about the mid-

dle, hairy at the base only; spikes in pairs, one to two inches long, spikelets smooth, ovate, pointed, flat compressed, arranged in two rows beneath the narrower flattened axis. Distribution, United States. A very useful native grass, common on the seashore, where its long rooting stems bind the sand and soil, preventing denudation. It is valueless for pasture, and appears only rarely to flower. October.

3. *P. vaginatum*. Stem roundish, ascending from a decumbent base, twelve to eighteen inches; leaves flat, smooth, two to four inches long, sheaths open, ciliate, except the upper one which is longer and closed; spikes two, approximate, spreading, two inches long, hairy at the jointed base; spikelets one-eighth of an inch, ovate, convex on the inner surface, slightly imbricated, in two rows, beneath the flattened axis, the latter as wide as the spikelets and channelled. Distribution, Southern United States; habitat, cultivated ground, not uncommon. October.

4. *P. conjugatum*. A smooth, erect, annual grass; leaves flat, ciliate, four inches long, quarter-inch broad, sheaths compressed, the upper very long; spikes twin, both at the summit of the stem, sometimes with a third lower down, three inches long and very slender; spikelets minute, roundish ovate, flat on the outer surface, hairy on the margin, in two rows beneath the flattened axis, which is nearly as wide as the spikelets. Distribution, West Indies; habitat, fields, rather local.

5. *P. setaceum*. Stems slender, rigid, ascending from a decumbent base, one to two feet long, with distant joints; leaves three to eight inches long, sometimes purplish, margin undulate and fringed with long silky hairs; upper sheath very long and loosely investing the one to three slender flowering stems; spikes one to three on each stem, one terminal, others rather distant, two to three inches long, smooth, half erect; spikelets roundish, blunt, the flattened side turned outwards, in two or three rows beneath the narrower flexuous axis. Distribution, Southern United States; habitat, waste places, pastures, and cultivated ground, frequent. July to October.

6. *P. (Digitaria) setigera*. Stem branched, kneeling and rooting at the lower joints, ascending, softly hairy; leaves lanceolate, two to four inches long, often purplish, margin undulate, sheath hairy; spikes usually four, in slender, somewhat distant, pairs, two to three inches long, spreading; spikelets narrow, in pairs, one stalked, the other sessile, lanceolate acute, green or tinged with purple; outer glume minute, second half as long as floret, third with five parallel nerves; axis slender, three-winged, as broad as spikelets. Distribution, West Indies; habitat, waysides, &c., common. October and November.

V. SPARTINA.

Spikelets much compressed, densely imbricated in a double row on the under side of the racemose spikes.

1. *S. cynosuroides* (Rush-grass). A perennial grass with erect,

wiry stems, two to four feet high; leaves two to three feet long, slender, the edges rolled together, tapering to a bristle-like point; spikes five to ten, shortly stalked, alternate, two to three inches long; spikelets three-eighths of an inch long; glumes unequal, outer harshly serrulate and awned, inner half as long and equal to the paleæ. Distribution, United States; habitat, small rocky islets, Hamilton to Sound, and seashores, common. A rush-like grass, forming dense clumps, sometimes growing below high-water mark.

VI. ELUSINE.

Spikelets five to six flowered, densely imbricated on the under side of the digitate spikes.

1. *E. Indica* (Cock's-foot grass). An annual grass, growing in coarse tufts; stems tough, twelve to eighteen inches high, branching at the procumbent base; leaves flat, six to eighteen inches long, together with the loose sheath, clothed with long, scattered hairs; spikes four to eight, one usually distant lower down the stem, the remainder spreading at the summit, two to three inches long; spikelets awnless, closely imbricated beneath the slender axis; glumes unequal, membranous at the margin. A widely-distributed species; habitat, waysides, paths, and cultivated ground. July to October.

c. Panicle very compact, spike-like in ovate or cylindrical heads.

VII. POLYPOGON.

Spikelet one-flowered, outer glume bearing long awns.

1. *P. monspeliensis*. A small, annual, seaside grass; stems half to one foot high, decumbent below; leaves flat, narrow, four to six inches long; panicle one to two inches long, oblong, blunt, with short, much-divided and densely-flowered branches; awns silky, twice as long as the glumes. Distribution, Europe and United States; habitat, seaside rocks, where it grows in little stunted tufts. Some subsoil at the Naval Hospital produced a large and vigorous crop over a foot in height. Panicle greenish-yellow; May.

VIII. SETARIA.

Spikelets two-flowered, the lower imperfect, surrounded by rough awn-like bristles, which arise from below the spikelet. Annual sub-erect grasses.

1. *S. viridis*. Stem rough, one to two feet high; leaves flat, narrowly lanceolate, rough on the margin, sheath ciliate; panicle much branched but contracted and spike-like, two inches in length; bristles in clusters much longer than the spikelets, roughened upwards. Distribution, Northern United States; habitat, cultivated ground, common. Panicle green with purplish bristles; March to May.

2. *S. verticillata*. This species is of similar growth to the last; it

is very common in cultivated ground from November to May, the panicles are purplish and the bristles are in pairs and roughened downwards or barbed, after flowering the heads become matted together and become troublesome by adhering to the clothes.

3. *S. glauca*. This is a West Indian species which, with us, flowers about October; it is found by waysides and in fields throughout the Islands, the stem and sheaths are smooth, and the spike which is nearly simple sometimes attains to a length of four inches; the bristles are roughened upwards, two or three times the length of the spikelets, and remain erect, yellow and persistent for some weeks after flowering.

IX. CENCHRUS.

Spikes terminal, consisting of several distinct, burr-like spikelets, each of which is two-flowered and enclosed in a persistent, spiny involucre which hardens around the fruit.

1. *C. echinatus* (Burr-grass). An annual sub-erect grass, one to two feet high; leaves lanceolate, tapering to a point, four inches long, one-third of an inch wide, with a few silky hairs near the base, margin rough, sheath open; spike two to three inches long, spikelets quarter-inch in diameter, spines slender, pubescent, in several series, the outer shorter, bristle-like. Distribution, Bahamas, &c.; habitat, cultivated ground and waysides, common. Spikes green, with purplish spines; July to October. The burrs are a nuisance, sticking to the clothes, or penetrating the flesh of the unwary.

2. *C. tribuloides*. Annual; stems procumbent, branching at the base, about a foot long; leaves short, minutely roughened on the margin; sheath open, hairy at the throat; spike two inches long, consisting of six to ten burr-like spikelets which are half an inch in diameter; spines stout, lanceolate or triangular acute, pubescent, in several series, without bristle-like hairs at base. Distribution, North America; habitat, sandy bays. Spike whitish; October.

X. ERAGROSTIS.

Spikelets many-flowered, awnless.

1. *E. ciliaris*. An annual grass; stems wiry, rigid, radiating and slightly ascending from the tufted base, about a foot long; leaves four to six inches long, narrowed to the slender point, with long silky hairs at base; panicle spike-like, interrupted below, two to four inches long, slender, purplish; spikelets about six-flowered, flat compressed, the paleæ fringed with white silky hairs. Distribution, West Indies; habitat, fields and waste places. October.

d. *Panicle somewhat contracted.*

XI. SPOBOBOLUS.

Spikelets one-flowered, awnless, outer glume rather smaller than the inner, which equals the membranous paleæ; stigmas plumose, projecting from the sides of the florets,

1. *S. (Agrostis) Virginicus*. A decumbent perennial grass, with numerous, coarse, rigid stems; leaves short, three to four inches, in two opposite rows, rigid and rolled together, tapering to the slender point; flowering branches ascending; panicle three inches long, cylindrical, contracted and half concealed within the inflated sheath. Distribution, Jamaica and United States; habitat, sandy shores, often half-buried in the sand. Panicle purplish-white; October.

2. *S. Indicus* (Tough-grass). An erect, slender grass, growing in tufts, branching at the base only; leaves long, flat, slender pointed; stem twelve to eighteen inches high, enclosed in the long sheath of the terminal leaf; panicle very slender, often nearly a foot in length, composed of alternate, erect, spike-like branches. Distribution, Florida and West Indies; habitat, roadsides, fields, &c., very common and probably native.

XII. OPLISMENUS.

Spikelets two-flowered, awned; panicle consisting of a few distant, scanty clusters.

1. *O. setarius*. A slender, creeping grass, with wiry, prostrate stems rooting at the joints; leaves ovate-lanceolate, acute, an inch to an inch and a half long, one-third of an inch wide, sheath ciliate; clusters three to six flowered, distant; awns purple, outer two to three times the length of its glume, innermost glume shortly awned; anthers and stigmas bright purple. Distribution, Jamaica; habitat, Ireland Island, roadside near parsonage and north road near cemetery, plentiful.

E. *Flowers usually in loose, spreading panicles.*

XIII. PANICUM.

Spikelets two-flowered, awnless, the lower floret abortive or male; glumes two, unequal, the outer smaller; paleæ of fertile floret cartilaginous; stigmas purple.

1. *P. colonum*. An erect, annual grass, about a foot high; leaves narrow, smooth, six to eight inches long, ligule none; panicle consisting of six or more, distant, one-sided spikes, the lowest being longest (about one inch); spikelets globose-ovate, pointed, roughly pubescent, clustered in about four rows beneath the slender axis. Distribution, Florida and Jamaica; habitat, waysides, not frequent—near Camden and Warwick. October.

2. *P. proliferum* (Cane grass). An annual, stout, erect grass; stems numerous, succulent, kneeling at the base, two to four feet long; leaves narrowly lanceolate, ten to fifteen inches long, half an inch wide, sheath hairy at the throat; panicle large, pyramidal, much branched; spikelets one-twelfth of an inch, racemose on the slender branchlets, lower floret abortive, anthers orange yellow. Distribution, United States; habitat, fields and waysides, common; a favourite food for cattle.

3. *P. maximum* (Guinea grass). A perennial grass, forming dense

tufts or clusters; stems stout, quite erect, five to seven feet high; leaves slender, about two feet long by three-eighths of an inch wide, margin rough with minute serratures; sheath ciliate; panicle large, a foot long, pyramidal, the lower branches whorled, very slender and bearing the spikelets on thread-like branchlets; paleæ of the fertile floret transversely wrinkled. Distribution, West Indies; habitat, fields, sometimes cultivated and planted in rows beside paths, &c. October and November.

4. *P. virgatum* (Cane grass). A stout perennial grass; stems ascending to a height of four or five feet; leaves flat, smooth, very long, hairy at the base, soon becoming yellowish; panicle about a foot in length, with alternate wavy branchlets on which the spikelets are shortly and closely stalked; spikelets one-sixth of an inch long, distinctly two-flowered, the lower enclosing three stamens, with long, purple anthers, upper floret perfect; glumes pointed, stigmas feathery, purple. Distribution, United States; habitat, waysides and marshy ground, Warwick.

5. *P. capillare* (Quaking grass). An annual grass, branching at the base and forming tufts; stems softly hairy, about a foot long; leaves four to six inches long, narrow, clothed with soft silky hairs, those on the sheaths being more rigid; panicle large, pyramidal, very loose and airy in appearance, the small purplish spikelets are remote on the long, slender, spreading branchlets. Distribution, United States and Canada; habitat, cultivated ground, very common, especially on poor soil. July to September. In autumn the dry panicles become detached and are carried about by the wind.

Two other species of *Panicum* are said to grow here, viz., *P. Melle* (Para grass), a pasture grass which has been naturalized in Jamaica, and *Panicum linare*.

Other species of grasses met with occasionally are the Fox-tail grass (*Alopecurus pratense*), the spike-like racemes of which appear in the early summer months, and the Water Rice (*Zizania aquatica*); the latter I found once only, in channels among marshes, north of Hamilton. There are also one or two undetermined species.

Nat: Ord: 78. Cyperaceæ.

Grass-like or rush-like plants with solid, frequently triangular, stems and narrow leaves with entire sheaths; flowers in spikes, one floret in the axil of each glume; florets destitute of paleæ, sometimes surrounded by a few bristles; stamens usually three, anthers fixed by their base; styles two or three, united below; ovary one-celled.

I. CYPERUS.

Umbel terminal, bearing compressed spikelets, consisting of two or more perfect florets.

1. *C. Nuttallii*. Stem triangular erect, four to six inches high; leaves lanceolate, shorter than the stem, flat; umbel contracted, rays few and short, involucreal leaves three or four, two being longer

than the others; spikelets many-flowered, much compressed, one-half to three-quarters of an inch long; glumes distinct at the top, brown on the sides, keel green; stamens and styles two; nut oblong, blunt, rough. Distribution, United States; habitat, borders of marshes, north of Hamilton. August to October.

2. *C. rotundus*, L., vel. *C. hydra* (Nutgrass). Perennial; underground stems slender, creeping and branching, bearing ovoid tubers; stem triangular, erect, six to twelve inches high; leaves smooth, shining, as long as the stem, flat, channelled; umbels unequal, three to seven rayed; involucre of three to five unequal leaves; spikelets flat compressed, alternate, many-flowered; stamens and styles three; nut triangular. Distribution, Jamaica and United States; habitat, found everywhere throughout the Islands—a most troublesome and pernicious weed in cultivated ground. Spikelets half an inch long, brown; May to July.

3. *C. flexuosus*. Stem smooth, triangular, two to three feet high; umbel large, irregular, involucre of six to ten long, irregular leaves; spikelets sub-cylindrical, slender, few-flowered, quarter-inch long; styles and stamens three; nut triangular. Distribution, Jamaica; habitat, borders of marshes.

4. *C. ligularis*. Stem smooth, triangular, about two feet high; involucral leaves five to eight, very long, unequal; umbel three to seven rayed, irregular, the rays terminating in dense, blunt, ovoid heads; spikelets lanceolate, turning every way, fifty to sixty in each head. Distribution, West Indies; habitat, fields, Paget. Heads half-inch diameter; September.

II. KILLINGIA.

Heads solitary or few, terminal; spikelets densely clustered, containing one fertile flower and two or three empty glumes.

1. *K. monocephala*, vel. *K. cruciformis* (Bog-rush). Rhizome creeping, stem erect, eight to twelve inches high, bearing several flat, narrow leaves; heads solitary, globose, quarter-inch diameter; involucre cruciform, three-leaved, the upper leaf longer and erect; glumes membranous, with a green keel; styles two; nutlet compressed. Distribution, West Indies; habitat, all marshes, common. Heads pale green; July to October.

III. ELEOCHARIS.

Stem simple, leafless; spike bractless, solitary, terminal, cylindrical, with the scale-like glumes imbricated all round; nut crowned with the bulbous base of the style.

1. *E. equisetoides* (Spiked rush). Stems cylindrical, erect, two to three feet high, with twenty to thirty joints, corresponding with internal pithy partitions; spike appearing as a continuation of the stem, an inch long, scales roundish, chaffy, obtuse; florets supported by six short, rigid bristles. Distribution, United States and West Indies; habitat, marshes, common. July to October.

2. *E. palustris*. Stem cylindrical, slightly compressed, one to two feet high, one-sixth of an inch in diameter, not jointed, pith scattered, spike cylindrical, about an inch long, many-flowered; scales rusty-brown, oblong, obtuse, with a membranous margin. Distribution, Northern United States; habitat, marshes and ponds. November.

3. *E. melanocarpus*. Stem compressed, slender, not jointed, six to twelve inches high, terminating in an ovoid, oblong spike one-third of an inch long; glumes ovate, florets supported by three purple bristles. Distribution, United States; habitat, marshes, common.

IV. SCIRPUS.

Stem simple; spikes numerous; style not bulbous at base.

1. *S. lacustris* (Bull-rush). Stem stout, leafless, cylindrical, erect, four to six feet high, gradually tapering upwards, continued a little above the panicle and terminating in a short tooth; spikes oblong, half-inch long, in clusters of two to four on the secondary divisions of the panicle; scales brown, densely imbricated, ovate, pubescent. Distribution, Europe and North America; habitat, marshes and ponds. July.

V. RHYNCHOSPORA.

Perennial grass-like plants; stem leafy; spikelets few-flowered, in terminal heads, supported by leafy bracts; glumes imbricated in several rows; nut beaked with the persistent base of the style.

1. *R. stellata* (White-headed rush). Stem triangular, simple, erect, one to two feet high; leaves very slender, six to eight inches long; heads white, hemispherical, supported by four to six slender leafy bracts, which are white at the base; spikelets ovate-oblong, one-sixth of an inch long; nut twice as long as the pointed beak. Distribution, West Indies; habitat, marshes, easily recognised by the white heads and variegated bracts.

VI. CLADIUM.

Perennial plants with erect leafy stems; spikelets few-flowered in terminal and axillary panicles; glumes irregularly imbricated, the lower ones usually empty.

1. *C. occidentale*. Stem stout, six to eight feet high, bluntly triangular below, cylindrical above; leaves two to three feet long, one-third of an inch wide, rigid and rough, finely serrated on margin and keel; panicles numerous, much branched, shortly protruding from all the upper axils; spikelets minute, shining brown, in clusters of three to six on the final divisions of panicle, supported by brown scaly bracts; stamens two; nut sub-globose. Distribution, Bahamas, &c.; habitat, marshes, very common.

CLASS III.—GYMNOSPERMA.

Trees with stems usually resembling the Dicotyledons; leaves rigid, needle-shaped, or scaly; flowers, destitute of calyx and corolla, consisting only of scales, on the face of which the unenclosed ovules are seated.

Nat: Ord: 77. Coniferae.

Trees with resinous juice, bearing fleshy or woody cones.

I. JUNIPERUS.

Evergreen trees with rigid, scale-like leaves; male and female flowers on separate trees; male catkin cylindrical, terminal, the anthers attached to the edge of the scales; female catkin ovoid, scales becoming fleshy and forming a three-seeded berry.

1. *J. Bermudiensis* (Bermuda Cedar). A large evergreen tree; leaves very small, scale-like, densely imbricated in four rows, channelled on the back with a shallow furrow, ovate, appressed, persistent, becoming elongated, brown, and sharply pointed on the older branchlets; male catkin oblong, cylindrical, half-inch long; berry purplish, size of a pea. Distribution, Bahamas and Jamaica, as *J. Barbadiensis*.

The Cedar,—or, more correctly speaking, the Juniper,—is peculiarly the native tree of Bermuda, so prevalent as to become almost wearisome in its sombre monotony. The earliest discoverers mention the Islands as being covered with it, and there is evidence that for long years previous, and before subsidence lessened the area of the Bermudas, the same form of vegetation prevailed. The submerged trunks of former forests are met with even amongst the outer reefs, and may be observed in many of the shallower bays. Dredging operations at Ireland Island frequently bring to the surface the remains of cedar trees in various stages of decay, and embedded in peaty deposits.

The wood, which is very durable and fragrant, but rather brittle, is much valued for building the native boats, which are popularly supposed to remain sound in the water for over one hundred years. Formerly, before the days of steam, these Islands possessed quite a fleet of sailing vessels built of this wood, but latterly they have dwindled down to insignificance, the barque "Sir G. F. Seymour," which plies regularly between Bermuda and London, being the most important survivor.

The trees vary much in size according to soil and situation, sometimes crowning a solitary barren rock, at a distance from the shore, where the soil appears insufficient for the most scanty vegetation. Probably in former years, before the richer lands were cleared for planting purposes, the Cedar grew to a much greater height and girth than at present. The largest with which I am acquainted is growing near the seaside at Daniel's Head, Somerset, and measures

fourteen feet in circumference and five and a half feet in greatest diameter at ten feet from the base.

In March and April the male catkins appear and scatter dense clouds of dust-like pollen in wasteful profusion; soon afterwards they fall off, forming brown heaps along the roads. The catkins of the female tree are liable to be overlooked until the fruit has formed.

Several species of Pine appear by former lists to have been introduced into Bermuda, but they do not seem to have established themselves.

The only other plant of this class which claims notice is the Sago Palm (*Cycas revoluta*), which is frequently found in shrubberies; the rough naked trunk bears at its summit a cluster of graceful feather-like leaves, the leaflets being slender, glossy and acute, in innumerable pairs; the base of the petiole is spiny, and the cones are hidden in the terminal, cushion-like bud, which continues its growth after the scarlet seeds are matured.

CLASS IV.—CRYPTOGAMIA.

Flowerless plants, not reproduced by seeds, but by dust-like spores.

Nat: Ord: 78. Filices.

Ferns; stem or rhizome usually prostrate, creeping and scaly, with fibrous roots; leaves (fronds) rolled together with the point inwards, before unfolding, veins forked; spores microscopic, contained in minute capsules which are collected in variously formed clusters (called sori) on the margin or under surface of the leaves, sometimes on special fertile leaves.

A. Polypodiaceæ.—*Capsules surrounded by an elastic ring.*

I. ADIANTUM.

Sori distinct, oblong, on the reflexed apex of the leaflets, which forms a covering membrane.

1. *A. cuneatum* (Maidenhair). Leaves spreading, ovate in outline, about six inches long, twice or thrice pinnate; petiole black, shining, alternately divided, and bearing the leaflets on the slender hair-like divisions; segments membranous, one-fourth to one-third of an inch in diameter, obliquely wedge-shaped at the entire base, irregularly lobed and serrate above, lobes reflexed and bearing the sori. Habitat, banks, old walls and waysides throughout the Islands, very common.

The common Maidenhair fern (*A. capillus-veneris*), and a West Indian species (*A. trapeziforme*), the latter with very large trapezoid leaflets borne on hair-like branchlets, are general in-door favourites.

II. PTERIS.

Sori continuous along the margin of the leaflets, which often forms a membranous covering.

1. *P. caudata* (Bracken). An erect, much divided fern, four to six feet high; leaves triangular in outline, three-parted, branches twice pinnate, ultimate segments distant, narrow, oblong, blunt, lower ones pinnatifid, upper entire, oblique at the half-auricled base, terminal segment elongated; sori continuous along the reflexed margin. Distribution, Southern United States; habitat, marshes, one of the largest and commonest of our ferns; the leaves present a dry, brownish-green appearance.

2. *P. heterophylla*. Leaves about eight inches high, pinnate above, twice pinnate at the base; fertile segments few-serrate at the apex only; barren segments coarsely serrate above the wedge-shaped base; sori naked continuous beneath the margin of the leaflets. Distribution, Jamaica; habitat, caves, Walsingham.

Pteris longifolia, a species with simply pinnate leaves and very long, narrow, and finely serrated leaflets, appears to have quite established itself in grottoes, &c., below Mount Langton.

III. WOODWARDIA.

Sori distinct, oblong, parallel with the midrib.

1. *W. Virginica*. Leaves all alike, two to three feet high, smooth, pinnate, with alternate leaflets, the latter deeply pinnatifid with lanceolate segments, the veinlets arising from a central chain of loops, parallel with the midrib, on which the oblong sori are situated. Distribution, United States; habitat, Devonshire marshes, plentiful. Resembles at first sight the barren fronds of *Osmunda cinnamomei*, from which it may easily be distinguished by its deeper green colour and the winged appearance of the midveins.

IV. ASPLENIUM.

Sori distinct, oblong, oblique to the midrib.

1. *A. Trichomanes*. Leaves pinnate, three to six inches long; petiole wiry, black and shining; leaflets small, nearly sessile, bright green, roundish obovate, entire at the oblique, wedge-shaped or abrupt base, crenate above; sori about five in number, oblique from midrib to margin. Distribution, Europe, United States, and Jamaica; habitat, wayside rocks and old walls, common, growing in dense tufts.

2. *A. dentatum*. A West Indian species, scarcely distinguishable from the above, is found in caves at Walsingham; the leaflets are less distinct and the petiole is brown. *A. cicutarium* is also said to grow in similar situations, and several other species have been introduced from the West Indies, but are not met with out of cultivation.

V. ACHROSTICHUM.

Sori covering the whole of the underside of the leaflets of the fertile leaf.

1. *A. aureum*, vel. *Chrysodium vulgare* (Giant fern). Leaves stout, erect, leathery, four to six feet high, simply pinnate; leaflets alternate, entire, oblong-lanceolate, six to eight inches long, two inches

wide ; barren leaves, bright glossy green ; fertile leaves completely covered beneath with golden, brownish spores. Distribution, West Indies and Florida ; habitat, marshes. A large, handsome fern.

VI. ASPIDIUM.

Sori scattered, orbicular or kidney-shaped, covered with a membrane and attached by the centre, beneath the slender veinlets.

1. *A. exaltatum*. Leaves simply pinnate, sub-erect or weak and trailing, narrow oblong, two to three feet long by two or three inches wide ; petiole somewhat woolly ; leaflets leathery, oblong-lanceolate, acute, finely serrated, abrupt and sessile at the base, bearing upwards an angular lobe, veinlets thickened near the margin ; sori on the termination of the veinlets nearer to margin than to midrib ; membrane kidney-shaped, attached at the notch and opening all round, allowing the capsules to escape. Distribution, West Indies ; habitat, woods near caves and in marshes, common.

2. *A. Capense* (Ten-day fern). Rhizome and base of petiole covered with chaffy scales ; leaves smooth, shining, triangular ovate, twice or thrice pinnate ; petiole and its divisions winged ; leaflets leathery, ovate, incisely lobed and toothed, wedge-shaped at the base ; sori orbicular, attached by the centre, few in number and scattered on the slender upper veinlets. Habitat, Devonshire marsh, rare ; my specimens were growing on the half-immersed trunk of a spreading Palmetto.

3. *A. patens*. Swartz. Leaves lanceolate, softly pubescent, pinnate, one to four feet high ; petiole four-angular, hairy ; leaflets lanceolate, pointed, *pinnatifid to the middle*, lobes short, oblong, blunt ; veinlets simply pinnate, lowest pair uniting at the sinus ; sori small, kidney-shaped, midway between the midvein and margin of the lobes. Distribution, Bahamas, Florida, &c. ; habitat, waysides and woods, very common and variable in size.

4. *A. Helypteris* (Lady fern). A smaller species than the last ; leaves lanceolate-ovate, somewhat pubescent, pinnate, about a foot high, petiole rounded beneath, channelled above ; leaflets narrow lanceolate, *pinnatifid almost to midrib* ; lobes oblong, acute ; veinlets forked ; sori small, placed close together, at length uniting and spreading over the whole under surface. Distribution, England and Northern United States ; habitat, wayside hollows.

5. *A. molle*. Swartz, vel. *A. tetragonum*. Hooker. This species is more rarely met with, and is not to be distinguished from *A. patens* but by the veins. In this species the lowest pair of veinlets unite to form a vein which runs into the sinus (*Grisebach*).

B. Osmundæ.—*Capsules destitute of an elastic ring.*

VII. OSMUNDA.

Capsules sessile or shortly stalked, two-valved, in dense clusters on the contracted leaves or in terminal panicles.

1. *O. regalis* (Royal or flowering fern). A large, handsome fern.

three to four feet high ; leaves twice pinnate, smooth, pale green ; leaflets distant, oblong-ovate, acute, obscurely serrate, about an inch in length and one-third of an inch wide ; fertile leaves unaltered below, but the upper leaflets are contracted and bear the clusters of spores in the form of a panicle. Distribution, Europe and North America ; habitat, Devonshire marshes.

2. *O. cinnamomea*. Growing in clusters three to five feet high ; fertile and barren leaves distinct ; barren, pinnate, bearing tufts of yellowish wool at the base of leaflets ; leaflets opposite, three to four inches long, half-inch wide, deeply pinnatifid ; segments oblong, blunt, entire ; fertile leaves shorter, the leaflets all contracted, clothed, as well as the petiole, with loose, yellowish wool, and thickly covered with the small, roundish capsules. Distribution, United States and West Indies ; habitat, Devonshire marshes, very common.

Few other orders of flowerless plants are represented in Bermuda. A small, wiry plant (*Psilotum triquetrum*), with erect, forked branches and minute scaly leaves, the spores contained in sessile, three-lobed spore cases, is found occasionally, from Causeway to Paynter's Vale.

A small moss (*Tortula muralis*) is common, forming a green, velvet-like mantle on old walls and wayside banks ; the thread-like stems bear little urns, which contain the spores.

Lichens are very poorly represented, one species of *Peltidia* being found on old walls, and two species of *Cenomyce* on decaying vegetation in the marshes.

Amongst the Fungi, the edible mushroom (*Agaricus campestris*) appears to be generally distributed, but nowhere plentiful. At least six other species of *Agaricus* seem to be indigenous, two of which, one with a yellow, the other with a red pileus or cap, appear in abundance after rain around the base of the cedars. A jelly-like species (*Tremella intumescens*) springs up amongst the grass in great abundance in wet weather.

LIST OF PLANTS *occasionally met with, but not included in the foregoing pages, some of them being represented by only a solitary specimen.*

BOTANICAL NAME.	ENGLISH NAME.	REMARKS.
<i>Ailanthus glandulosus</i>	Tree of Heaven	Large tree, Public Buildings, &c.
<i>Alpinia nutans</i>	Shell plant or Wild ginger	Gardens and shrub-beries.
<i>Begonia</i>	Begonias	Several species in conservatories.
<i>Calendula arvensis</i>	Field marigold	Gardens, Salt-kettle.
<i>Capparis Jamaciensis</i>	Caper-bush	Par le ville.
<i>Chrysophyllum canito</i>	Star apple	Cultivated, rare.
<i>Dieffenbachia seguine</i>	Dumb-cane	Mount Langton.
<i>Fourcroya cubensis</i>	Aloe, Bamboo	Waysides and plantations.
<i>Guaiacum officinale</i>	Lignum vitæ	Garden shrub.
<i>Liliodendron Tulipifera</i>	Tulip-tree	Par le ville.
<i>Melianthus major</i>	Honey-flower	Mount Langton.
<i>Magnolia grandiflora</i>	Magnolia	Small shrubs, Walsingham.
<i>Morinda Royoc</i>		Maple-like tree, Spanish Point.
<i>Negundium Americanum</i>	Box Elder	Shrub near Lighthouse
<i>Pavonia spinifex</i>		Par le ville.
<i>Pittosporum undulatum</i>	Laurel	Laurel-like shrub, Walsingham.
<i>Psychotria undata</i>		Mount Langton.
<i>Quassia amara</i>	Bitterwood-tree	Gardens.
<i>Reseda odorata</i>	Mignonette	Gardens.
<i>Ruta graveolens</i>	Rue	Mount Langton.
<i>Swietenia chloroxylon</i>	Satinwood	Large tree, Flatts.
“ Mahogoni	Mahogany	Public Park.
<i>Zygophyllum festidum</i>	Bean caper	

LIST OF PLANTS mentioned in former lists as growing wild in Bermuda, which have not been verified and are consequently omitted.

BOTANICAL NAME.	ENGLISH NAME.
<i>Æthusa leptophyllum</i>	Fool's parsley.
<i>Argemone albiflora</i>	White flowered Mexican thistle.
<i>Artemisia tenuifolia</i>	French fennel.
<i>Batatas littoralis</i>	Seaside convolvulus.
<i>Briza media</i>	Quaking grass.
<i>Cochlearia officinalis</i>	Scurvy grass.
<i>Convolvulus soldanella</i>	
<i>Crithmum maritimum</i>	Samphire.
<i>Euphorbia Ipecacuanha</i>	Bastard Ipecac.
<i>Euphrasia officinalis</i>	Eyebright.
<i>Hypericum mutilum</i>	St. John's wort.
<i>Ipomœa Batatoides</i>	Seaside creeper.
<i>Medicago sativa</i>	Lucern.
<i>Onobrychis sativa</i>	Saintfoil.
<i>Oxalis acetosella</i>	Wild sorrel.
<i>Sarracenia purpurea</i>	Saddle flower.
<i>Verbena officinalis</i>	Common vervain.

ARTIFICIAL KEY TO ORDERS, &c.

A. FLOWERING PLANTS.

CLASS I.—DICOTYLEDONS.—See page 3.

DIVISION I.—POLYPETALÆ.—Petals distinct.—See page 3.

SUB-DIVISION I.—THALAMIFLORÆ.—Stamens hypogynous.—See page 3.

ORDER OR GENUS.

- Stamens four, styles four, petals minute or absent.....*Sagina*.
 Stamens five, style one, flowers irregular, capsule bursting with elasticity.....*Balsaminaceæ*.
 Stamens five, styles one, flowers regular, fruit a berry.....*Vitaceæ*.
 Stamens five, styles three, flowers small, in spikes.....*Tamaricaceæ*.
 Stamens five, styles five, capsule ten-celled.....*Linaceæ*.
 Stamens six, four long and two short, style one, petals four, cross-wise.....*Cruciferaæ*.
 Stamens six, equal, united, style one, flowers irregular.....*Fumariaceæ*.
 Stamens seven, united at base, styles five, fruit beaked.....*Pelargonium*.
 Stamens eight, distinct, styles one or three, fruit three-celled.....*Sapindaceæ*.
 Stamens ten, united into a tube, style one, fruit a drupe.....*Meliaceæ*.
 Stamens ten, distinct, style one, fruit spiny, four-seeded *Triumfetta*.
 Stamens ten or more, distinct or united, style one, fruit a succulent berry.....*Aurantiaceæ*.
 Stamens ten, distinct, styles three to five, capsule many-seeded.....*Caryophyllaceæ*.
 Stamens ten, half abortive, distinct, styles five, carpels five, one-seeded.....*Suriana*.
 Stamens ten, united at base, styles five, capsule five-celled, many-seeded.....*Oxalidaceæ*.
 Stamens ten, united at base, styles five, carpels five, one-seeded, beaked.....*Geraniaceæ*.
 Stamens fifteen to twenty, unequal in length, style one, capsule many-seeded.....*Cleome*.
 Stamens numerous, distinct, stigma radiate, sepals two, capsule many-seeded.....*Papaveraceæ*.
 Stamens numerous, distinct, style one, sepals four, coloured, fruit a drupe.....*Guttiferaæ*.
 Stamens numerous, distinct, styles many, sepals five or more, carpels one-seeded.....*Ranunculaceæ*.
 Stamens numerous, united into a tube, styles five or more *Malvaceæ*.
 Stamens numerous, united into three bundles, styles three, capsule many-seeded.....*Hypericaceæ*.

ARTIFICIAL KEY—*Continued.*

SUB-DIVISION II.—CALYCIFLORE.—Stamens inserted into calyx.—
See page 18.

ORDER OR GENUS.

- Stamens four, style one, short, petals minute, capsule four-lobed..... *Isnardia*
 Stamens five, styles two, flowers in umbels, fruit separating into two seed-like divisions..... *Umbelliferae*.
 Stamens five, stigmas three, fleshy, flowers unisexual, fruit many-seeded..... *Cucurbitaceae*.
 Stamens five, styles three, flowers perfect, fruit a one-seeded drupe..... *Anacardiaceae*.
 Stamens five, united, styles five, vines, fruit a many-seeded berry..... *Passifloraceae*.
 Stamens eight, distinct, style one, trees, fruit one-seeded..... *Rhizophoraceae*.
 Stamens eight, distinct, stigmas four-parted, capsule many-seeded..... *Onagraceae*.
 Stamens eight, distinct, style one, flowers in cone-like heads, nutlets woody, one-seeded..... *Conocarpaceae*.
 Stamens ten, distinct or united into one or two bundles, style one, fruit a pod..... *Leguminosae*.
 Stamens ten, distinct, styles five, leafy, the sexes borne on separate trees..... *Papayaceae*.
 Stamens twelve or less, styles five, capsule many-seeded..... *Portulacaceae*.
 Stamens, numerous, stigma many-cleft, petals numerous..... *Cactaceae*.
 Stamens numerous, style one, petals four or five, ovary inferior..... *Myrtaceae*.
 Stamens numerous, styles one or more, ovary superior..... *Rosaceae*.
 Stamens numerous, styles three, calyx coloured within, petals none..... *Sesuvium*.

DIVISION II.—MONOPETALÆ.—Petals united.—See page 36.

- Stamen one, style one, corolla spurred at base..... *Centranthus*.
 Stamens two, style one, shrubs, corolla regular, valvate, fruit a drupe..... *Oleaceae*.
 Stamens two, style one, shrubs, corolla regular imbricate, berry two-seeded..... *Jasminaceae*.
 Stamens two, style one, herbs, corolla irregular, nutlets four..... *Labiatae*.
 Stamens two, style one, herbs, corolla nearly regular, nutlets two..... *Stachartepbeta*.
 Stamens two, style one, herbs, capsule two-celled, many-seeded..... *Vernonia*.
 Stamens three, style one, herbs, fruit one-seeded..... *Valerianella*.
 Stamens four, equal, very short, style one, corolla regular, fruit inferior, two or more seeded, leaves opposite or whorled..... *Rubiaceae*.
 Stamens four, equal, very long, style one, corolla membranous, capsule many-seeded, flowers in spikes..... *Plantaginaceae*.

ARTIFICIAL KEY—*Continued.*

ORDER OR GENUS.

- Stamens four, in unequal pairs, style bifid, corolla two-lipped, nutlets four, distinct..... *Labiatae*.
 Stamens four, in unequal pairs, style bifid, corolla two-lipped, fruit a two to four seeded capsule or berry..... *Verbenaceae*.
 Stamens four, in unequal pairs, style bifid, corolla two-lipped, capsule many-seeded..... *Scrophulariaceae*.
 Stamens four, in unequal pairs, usually with rudiment of a fifth stamen, trees or shrubs, pods leathery..... *Bignoniaceae*.
 Stamens five, anthers united into a tube, style one, flowers in heads..... *Compositae*.
 Stamens five, distinct, style one, seed solitary unenclosed..... *Myrabilis*.
 Stamens five, distinct, style one, nutlets four, one-seeded..... *Boraginaceae*.
 Stamens five, distinct, opposite corolla-lobes, style one, capsule globose, many-seeded..... *Primulaceae*.
 Stamens five, distinct, alternate with corolla-lobes, style one, capsule elongate..... *Gentianaceae*.
 Stamens five, distinct, style one, fruit a many-seeded pod..... *Apocynaceae*.
 Stamens five, distinct, style one, herbs or shrubs, capsule or berry many-seeded..... *Solanaceae*.
 Stamens five, distinct, style one, creeping vines, capsule two or four celled, cells one-seeded..... *Convolvulaceae*.
 Stamens five, style one, corolla split to base, fruit a one-seeded drupe..... *Scorola*.
 Stamens five, style one, corolla regular, fruit a two-seeded berry..... *Rubiaceae*.
 Stamens five, style one or three, corolla regular, fruit a many-seeded berry..... *Caprifoliaceae*.
 Stamens five, styles two, sepals and petals almost distinct, furnished with hood-like appendages..... *Asclepiadaceae*.
 Stamens five, styles two, flowers regular, nutlets two..... *Dichondra*.
 Stamens five, styles two, flowers regular, capsule many-seeded..... *Hydroleaceae*.
 Stamens eight, styles four, corolla bell-shaped, carpels four, distinct..... *Bryophyllum*.

DIVISION III.—APETALAE.—Corolla, and sometimes calyx, absent.
See page 68.

- Stamens one or two, style one, flowers sunk in cavities of leafless stem..... *Salicornia*.
 Stamens one to four, style one, flowers minute, calyx coloured..... *Boerhaavia*.
 Stamens one to five, styles two, flowers minute, fruit one-seeded..... *Chenopodiaceae*.
 Stamens two, styles three, flowers naked, in spikes..... *Piperaceae*.
 Stamens three to five, inserted on calyx, flowers minute, unisexual, supported by bracts, seed solitary..... *Amaranthaceae*.

ARTIFICIAL KEY—*Concluded.*

ORDER OR GENUS.

- Stamens four, inserted on valvate calyx, style one, fruit one-seeded *Urticaceae*.
 Stamens four, inserted on valvate calyx, styles two, fruit a cluster of one-seeded berries *Moraceae*.
 Stamens five, styles two, fruit a one-seeded drupe *Ulmaceae*.
 Stamens four to six, styles two, flowers in catkins, drupes one-seeded *Myrica*.
 Stamens six to eight, styles three, stem sheathed at joints, fruit a triangular nut or grape-like berry *Polygonaceae*.
 Stamens usually numerous, distinct or united, styles two or three, sometimes branched, fruit separating into two or three one-seeded divisions *Euphorbiaceae*.

CLASS II.—MONOCOTYLEDONS.—*See page 80.*

- Stamen one, a single anther slightly attached to a petal-like filament *Marantaceae*.
 Stamens two, styles two, sedges *Cladium*.
 Stamens three, and three abortive ones, style one, petals two or three *Commelyna*.
 Stamens three, distinct or united, styles one or three *Iridaceae*.
 Stamens three, styles three, flowers glumaceous, stem triangular, solid *Cyperaceae*.
 Stamens three, styles two, flowers glumaceous, stem roundish hollow *Graminaceae*.
 Stamens six, style one, palm-like plants *Musaceae*.
 Stamens six, style one, ovary inferior, flowers regular, coloured *Amaryllidaceae*.
 Stamens six, style one, ovary superior, flowers regular, coloured *Liliaceae*.
 Stamens six, style one, ovary superior, flowers scaly *Juncaceae*.
 Stamens six, styles three; palms *Palmaceae*.
 Stamen and style cohering into a fleshy column which bears the pollen masses, flowers very irregular *Orchidaceae*.

CLASS III.—GYMNOSPERMIA.—*See page 99.*

- Anthers borne on edge of scales, trees *Juniperus*.

CLASS IV.—Flowerless plants.—*See page 100.*

- Spores borne on back of leaves *Filices*.

GLOSSARY.

- ACHENE**, a dry, one-seeded fruit.
ADVENTITIOUS, out of usual position.
ALTERNATE, on opposite sides in succession.
ANNUAL, yearly.
ANTHER, the lobe which crowns the stamen.
APPRESSED, closely applied.
AURICLE, an ear-like appendage at base of some leaves.
AXIL, angle of leaf and upper part of stem.
BIENNIAL, two years.
BIPID, cleft in two parts.
BIFINNATE, twice pinnate.
BRACTS, leaves placed outside of the calyx.
BRACTEOLAS, small bracts.
CALYX, the outer envelope of the flower, usually green.
CAPITATE, growing in heads.
CAPSULE, a dry seed-vessel opening by valves or pores.
CARPELS, the divisions of which a compound ovary is formed.
CATKIN, a spike of imperfect flowers.
CLAW, the base of the petal.
CORDATE, heart-shaped.
COROLLA, the inner envelope of the flower, usually bright coloured.
CORYMB, a level-topped raceme.
CYME, a level-topped panicle.
DECIDUOUS, early falling off.
DECUMBENT, lying down after arising at the base.
DIADELPHOUS, united in two bundles.
DIGITATE, several leaflets radiating like fingers.
DICOTYLEDONS, having two seed-leaves.
DIOECIOUS, male and female flowers on separate plants.
DISC, a fleshy ring surrounding the ovary.
DISCOID, when the florets of a head are all tubular.
DRUPE, a fleshy fruit, containing a hard stone ; *e.g.*, the peach.
EMARGINATE, with a notch at the end.
EMBRYO, part of seed forming future plant.
FASCICLE, a cluster or bundle.

GLOSSARY—*Continued.*

- FILAMENT, the stalk of the stamen which bears the anther.
 FLORET, small individual flowers of a head or cluster.
 FOLLICLE, a one-celled, many-seeded carpel, opening along one side.
 GEMINATE, twin, two together.
 GLANDS, cells containing oils, &c.
 HERMAPHRODITE, containing both stamens and ovary in the same flower.
 HYPOGYNOUS, arising from below the ovary.
 IMBRICATE, overlapping like tiles or slates.
 INDEHISCENT, not opening.
 INFERIOR, the ovary when the calyx is adherent to it, the latter being then *superior*.
 INVOLUCE, involucre surrounding the secondary branches of a cluster.
 INVOLUCRE, a whorl of bracts surrounding a cluster of flowers.
 LANCEOLATE, lance or spear-head shaped.
 LEAFLETS, the leaves or parts of a compound leaf.
 LIGULATE, strap-shaped.
 LYRATE OR LYRE-SHAPED, pinnatifid with the terminal lobe largest.
 MONADELPHOUS, united into one bundle.
 NODES, joints of the stem.
 OB, reversely, as *obovate*, reversely ovate, &c.
 OVARY, the part of the flower containing the young seeds.
 OVULES, young seeds.
 PALMATE, a leaf with the lobes spreading like the fingers of the open hand.
 PANICLE, flowers borne on branched divisions of the axis.
 PAPPUS, the bristles or hairs which crown the fruit of *Compositæ*.
 PERENNIAL, living several years.
 PERIGYNOUS, inserted on the calyx.
 PERSISTENT, remaining, not falling off.
 PETALS, the leaflets which compose the corolla.
 PETIOLE, the stalk of the leaf.
 PINNATE, a leaf bearing leaflets on each side of the midrib.
 PINNÆ, the branches or divisions of a pinnate leaf.
 PINNATIFID, a leaf divided about half way from margin to midrib.
 PLACENTA, the connection of the ovule to the ovary.
 POLLEN, the fertilizing powder contained in the anther.
 POLYGAMOUS, flowers male, female, and hermaphrodite.

GLOSSARY—*Concluded.*

PROCUMBENT, lying down.

RACEME, flowers simply stalked along a common axis.

RECEPTACLE, the enlarged end of the flower-stalk on which florets are inserted.

SEPAL, the leaves or divisions which compose the calyx.

SEGMENTS, divisions.

SERRATE, toothed like a saw.

SERRULATE, finely serrate.

SESSILE, not stalked.

SINUATE, curved in and out.

SPIKE, flowers sessile along a simple axis.

STAMENS, thread-like bodies within the corolla, the male organs of the flower.

STIGMA, the summit of the style, the female organ of the flower.

STIPULES, the scales at the base of some petioles.

STRIATE, having channels or streaks.

STYLE, the stalk arising from the ovary and bearing the stigma.

SUB, nearly, as *subsessile*, not quite sessile, &c.

SUPERIOR, the ovary when free and elevated above the calyx, the latter being then *inferior*.

TERNATE, growing in threes.

TRIFID, split or divided into three.

TRIFOLIATE, having three leaflets.

UMBEL, flowers borne on pedicels of about equal length which radiate from one point.

VISCID, sticky.

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